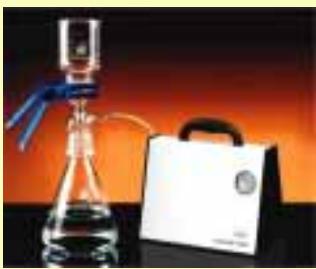




E-Chrom Tech

Instrument Manufacturer & Exporter in Taiwan



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A01- GC9800 Gas Chromatography



Descriptions

GC9800 series gas chromatography is a kind of practical analytical instrument with high performance which allows assembly of highly sensitive thermal conductivity detector (TCD) or highly stable hydrogen flame ionization detector (FID). The design and fabrication of this instrument are based on the principle of gas chromatography. It has reasonable structure, high sensitivity, and it is easy for operation and maintenance.

When operating GC9800, a certain kind of carrier gas (H₂, N₂, or Ar, which is called mobile phase) is needed. And the stationary phase is filled in the chromatographic column. The compositions of analyzed mixture are separated by multiple distributions between two phases or because of the difference of bulk additive adsorbability they are separated to different compositions. The single composition after chromatographic fractionation enters detector along with the carrier gas one after another. Then the corresponding electric signals will appear in the detector and be recorded with chromatographic data processor or chromatographic working station. Thus qualitative or quantitative analysis can be carried to each composition in mixture.

The instrument can be equipped with different sampling devices and it can be used to analyze gas, liquid and solid samples. In addition, GC9800 can make macro-analysis and micro-analysis for various gases and organic mixtures whose boiling point is below 350°C. GC9800 is an indispensable analytical instrument in the fields of petroleum, chemical industry, spice, medicine, hygiene, metallurgy, electric power, gas industry and many specific domains.

Different Models of GC9800:

- **GC9800TP**

TCD, double packed column injectors, microcomputer temperature control, three-stage temperature programming, automatic back door open system

- **GC9800FP**

FID, packed column and capillary column injector, microcomputer temperature control, three-stage temperature programming, automatic back door open system

- **GC9800FFP**

Double FID (double amplifiers), packed column and capillary column injector, microcomputer temperature control, three-stage temperature programming, automatic back door open system

- **GC9800TFP**

TCD+FID, packed column and capillary column injector, microcomputer temperature control, three-stage temperature programming, automatic back door open system

GC9800 Technique Parameter:

Operation Conditions

- Environment temperature: 5-35 °C
- Relative humidity: ≤ 85%
- Working environment: The room must be free from corrosive gas and hydrogen gas cylinder must be kept away from the fire. There must be no turbulent shock and strong magnetic field, which will affect the operation.
- Power supply: 200V ± (5%-10%), frequency: 50Hz ± 0.5Hz

Temperature Control

350°C ± 0.1°C; the temperature programming velocity is 0.1-25°C/min

Susceptiveness of Detector

- TCD (TC-1): S ≥ 2800mv.ml/mg (benzene)
- FID: D ≤ 1×10-11g/s (nC16)

Stability

Baseline Shift ≤ 30μv/15min, Noise ≤ 10μv

A02- Liquid Chromatography



High-pressure Gradient System



Isocratic System

Descriptions

High-pressure Gradient System (with UV230)

- A. High-pressure pump: 2 pcs
- UV/VIS detector: 1 piece
- High-pressure 6-port injector: 1 piece
- C18 column 5 μ m ID4.6 \times 200mm: 1 piece
- Gradient control module: 1 unit
- High-pressure gradient mixer: 1 piece
- Single channel chromatography data system: 1 unit

Isocratic System (with UV230)

- A. High-pressure pump: 1 piece
- UV/VIS detector: 1 piece
- High-pressure 6-port injector: 1 piece
- C18 column 5 μ m ID4.6 \times 200mm: 1 piece
- Single channel chromatography data system: 1 unit

High-pressure Gradient system (with DAD)

- B. High-pressure pump: 2 pcs
- Diode array detector: 1 piece
- High-pressure 6-port injector: 1 piece
- C18 column 5 μ m ID4.6 \times 200mm: 1 piece
- Gradient control module: 1 unit
- High-pressure gradient mixer: 1 piece
- DAD Data-Processing Software: 1 unit

Isocratic System (with DAD)

- B. High-pressure pump: 1 piece
- Diode array detector: 1 piece
- High-pressure 6-port injector: 1 piece
- C18 column 5 μ m ID4.6 \times 200mm: 1 piece
- DAD Data-Processing Software: 1 unit

Features & Specifications



P230 High Pressure Pump (Analytical)

Features

- The P230 Pump is a dual plunger solvent delivery system. The mechanical design includes short plunger stroke technology with two check valves. This results in very low pulsation.
- The microprocessor controlled speed regulation leads to a very stable speed of

the step motor, driving the plungers.

- Integrated calculation software continuously corrects flow rates according to the system pressure.
- Provide flow rate adjustment function when the actual flow rate is different from the preset.
- The RS232 remote port is designed to control by data system.

Specifications

- Flow range: 0.001-9.999mL/min, with 0.001mL/min increment
- Flow accuracy: $\leq \pm 0.3\%$ (1.000mL/min, 8.5MPa, water, ambient temperature)
- Flow stability: RSD $\leq 0.1\%$ (1.000mL/min, 8.5MPa, water, ambient temperature)
- Max pressure: 40MPa (0.001-4.999mL/min); 20MPa (5.000-9.999mL/min)
- Pressure precision: the displayed pressure error is less than $\pm 0.3\%$;
- Pressure pulsation: $1 \leq 1.0\%$
- Power requirements: 110/220V, 60/50Hz
- Power consumption: 180W
- Dimensions: 420mm \times 280mm \times 175mm
- Weight: 20kg



UV230+ UV/Vis Detector

Features

- Diode Array Technology for wavelength change without any mechanical moving parts.
- Dual lamp (deuterium / tungsten) for a spectral range of 190 - 720 nm.
- Programmable change of wavelength (up to 5 steps).
- Serial interface (RS232C) for external control.

Specifications

- Wavelength range: 190-720nm
- Light source: Deuterium lamp and Tungsten lamp
- Optical bandwidth: 6nm
- Wavelength accuracy: $\pm 0.5\text{nm}$
- Wavelength repeatability: $\pm 0.1\text{nm}$
- Wavelength programmable time setting range: 0.1-999.9min
- Rise Time: 0.0-9.9s

- Linear range: $\geq 1.5 \text{AU}$ (5%)
- Baseline noise: $\leq \pm 3 \times 10^{-5} \text{ AU}$ (empty cell, 254nm, 1.0s)
- Baseline drift: $\leq 5 \times 10^{-4} \text{AU/h}$ (empty cell, 254nm, time: 60min)
- Analytical flow cell :optical path length 10mm; volume 10 μL
- Semi-preparative flow cell: optical path length 3mm; volume 5 μL
- Micro flow cell: optical path length 3mm; volume 1.2 μL
- Power requirements: 110/220V, 60/50Hz
- Power consumption: 110W
- Dimensions: 420mm \times 280mm \times 175mm
- Weight: 8kg



DAD230 Diode Array Detector

Features

- A full-closed optical system and quartz light fiber based transmission technique was used.
- High spectral resolution and detect sensitivity were obtained.
- Combined with the powerful data system (DAD Data System Workstation), the instrument can provide a lot of information including chromatogram, spectra of components, three dimension information and peak purity results.

Specifications

- Wavelength Range:
199-618nm (512 Diodes)
190-1015nm (1024 Diodes)
- Light source: Deuterium lamp and Tungsten lamp
- Number of Diodes: 512/1024
- Array Resolution: 0.8nm
- Spectral Resolution: 1.2nm
- Wavelength Accuracy: $\pm 0.5 \text{nm}$
- Wavelength Repeatability: $\pm 0.1 \text{nm}$
- Rise Time: 0.1-9.9s
- Baseline Noise: $< \pm 1.5 \times 10^{-5}$ (AU); N2 in empty cell, 254nm, 1.0s
- Baseline Drift: $< 5 \times 10^{-4}$ (AU/h) N2 in empty cell, 254nm, time: 60min
- Flow Cell:
Analytical flow cell :optical path length 10mm; volume 10 μL
Semi-preparative flow cell: optical path length 3mm; volume 5 μL
- Micro flow cell: optical path length 3mm; volume 1.2 μL
- Operating Temperature: 4 to 40°C
- Operating Humidity: < 80%, non-condensing

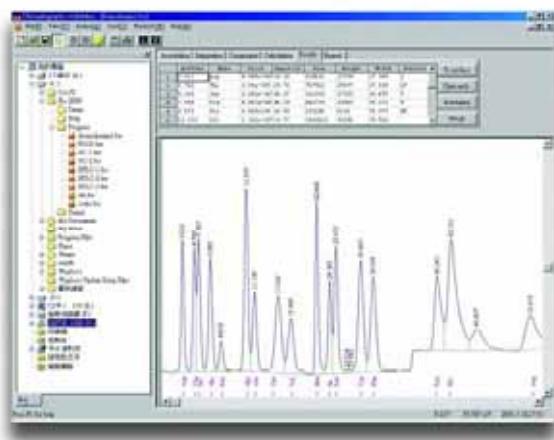
- Power requirements: 110/220V, 60/50Hz
- Power Consumption: 110W
- Dimensions: 420mm × 280mm × 180mm
- Weight: 8kg



DAD Data Working Station

- To guarantee DAD system a stable operation under Windows 9x, we adopt virtual driver. With a friendly interface and strong function DAD data-processing platform, users can conveniently observe and process contour map, spectrogram, chromatogram and three-dimensional spectrogram-chromatogram. With sufficient functions of chromatographic data processing and quantitative calculating, arbitrary revolving and parts magnifying, users can obtain more vivid visual effect and results analysis.
- DAD workstation can provide all kinds of chromatograms, including single wavelength, arbitrary two-wavelength absorptance, wavelength time procedure, max absorption wavelength and total absorption, and among them, the most sensitive detection method is max absorption wavelength chromatogram, while the best method to quantitate reproducibility is total absorption chromatogram.
- DAD system provides many discrimination methods on peaks purity, including contour map, three-dimensional spectrogram-chromatogram, overlap spectrogram, wavelength comparison diagram and peaks purity calculating method.
- Users can conveniently built their ultraviolet spectrogram gallery with the multifunctional spectrogram gallery managing and searching procedure, and the programme can auto-pick spectrogram to each peak from spectrogram, chromatogram and three dimensional data; auto-search spectrogram gallery; users can also add the auto-picked spectrogram into appointed gallery.

A03- Chromatography Data System



Model No. Peak-2000S (Single-channel)

Model No. Peak-2000D (Dual-channel)

Descriptions

- A. This software can be connected to all chromatography system, such as GC, HPLC, CPC, IC, CE, and it can replace all traditional recorder and integrator as well.
- B. It is compatible with Agilent, Hitachi, Jasco, Perkin-Elemlr, Shimadzu, Thermo, Varian and Waters chromatography system.
- C. The software has a dual-channel interface, which can receive signal whether directly from signal detector or simultaneously form both detectors.
- D. It is a flexible and reliable data handling system designed according to GLP norm. It is better suitable for research or other manufacturing industry.

Features

- A. Peak-ABC Chromatography Data Handling System is easy to operate because all you have to do is to learn the functions of these **Six working tables**. While the first two are for acquiring and processing a chromatogram, the remaining four are for identifying components; selecting an appropriate method of an analysis respectively.
- B. All the elements of an analysis (e.g. the acquired data signal; the integrated chromatogram; the applied integration methods; to the calculated results) are centralized in one source document called **Chromatogram file** in compliance with GLP requirements.
- C. These elements are intelligently structured within one screen comprising our unique **Six working tables** and a **Chromatogram frame** for your easy access and operation.
- D. When acquiring a data signal, we apply our patented **Noise Filtering Method** so as to detect the weakest signal close to the Baseline noise.
- E. When integrating a chromatogram, setting of parameters has been intelligently automated by the **Default Integration**. When applying **Manual integration** for post-acquisition processing, all you need to do is

just make three clicks on the mouse within the very same screen.

- F. When applying Quantitative analysis, you can conveniently choose from the whole range of Quantifying methods by making just one click.
- G. For reporting, you can customize the report in **Word** or **WordPad** application to be inclusive of the chromatogram the various calculated statistics and the manually input external reference information.
- H. Fully automated via **One-stop processing** with any Autosampler.
- I. Other features are **Export to Excel**, **Chromatogram complier**, **Result table complier**, **Save/ Load Template**, etc.

Specifications

Hardware Specifications

- 24-bit high precision Analog / Digital conversion device;
- Input bipolar range +/- 1V; +/- 2V; +/- 3V; +/- 5V;
- Input resistance : $>10M\Omega$;
- Linearity +/- 0.005% of full scale;
- Acquisition speed : Programmable at 1, 2, 5, 10, 20. Max of 60Hz is available upon request before delivery;
- Integration sensitivity : $0.05 \mu V\cdot s$;
- Consistency : $\pm 0.005\%$;
- Minimum resolution : $1 \mu V$;
- Accuracy more than 21 bit at 60Hz;
- Equipped with a remote starter to be connected to analytical instrument or Auto-sampler to receive the Start signal and Stop signal.

Computer Requirements

- CD ROM driver for installation of software;
- VGA graphics adapter (800x600 or higher resolution is recommended);
- 30M free space on hard disk drive for software installation;
- Free COM-port or USB-port in the case of ADC device;
- Installed with Windows 98, NT, 2000, XP, Vista or 7.

A04- On-line Solvent Degassing



Descriptions

This on-line solvent degassing equipment is installed between the mobile phase reservoir and HPLC pump. The mobile phase solvent enters the degasser entry through permeable membrane tube placed in a vacuum chamber. Because of the pressure difference of the wall of the permeable membrane tube, the dissolved gas continuously leaks out of the tube thus causing degassing for the mobile phase solvents. The degassed mobile phase is then moved to HPLC pump entrance through the gas-proof tube.

Features

- A. The system can continuously remove the dissolved gas from mobile phase.
- B. Have advantages of eliminating destabilizing factors and reducing baseline drift and noise.
- C. Able to lower interferences toward electrochemical detectors, fluorescence detectors, and ultraviolet detectors.

Specifications

Model	DG62-2	DG62-3	DG62-4
Number of channels	2 channels	3 channels	4 channels
Internal Volume/channel		15ml	
Maximum Flow Rate/channel		10ml/min	
Maximum Pressure/channel		5psig	
Dimensions (L × W × H)		278mm × 86mm × 155mm	
Power Requirement		50/60Hz, 200V/110V	
Weight (Kg)		6 Kg	

A05- HPLC Column Heater

Descriptions

This instrument is used to stably and precisely control the temperature of analysis thus sensitivity, separation of peaks, analysis time of the chromatography management can be improved to ensure the accuracy and reproducibility of sample results.

Model: CH-300 (500) Column Heater



Features

- A. Unified design allows the column flexible arrangement of horizontal or vertical setting.
- B. Accurate temperature control and display: Two 4-digit LED display can ensure temperature control accuracy to $\pm 0.1^{\circ}\text{C}$.
- C. Fast and easy column installation: Magnetic elements create easy opening and closing of the column heater cover.
- D. Easy for observation: Transparent window allows clear view inside the HPLC column.
- E. Safe anti-leaking design: A container placed under heating chamber can prevent liquid from leaking.
- F. Flexible column placement: Provide stainless clamp holder inside heating chamber to make it easy for installing the column under heat.
- G. Smooth pipe: Provide smooth connection between input and output ports to guarantee that liquid can pass through.
- H. Stable column heater base: Provide additional large size base that can be mounted with column heater when required to stabilize the column heater.
- I. Convenient sample inserting valve component kits that can be fixed at any height of the column heater.

Specifications

Model	CH-300	CH-500
Temperature Range	Room temperature to 100°C	
Max Temperature	110°C	
Temperature Increment	±0.1°C	
Temperature Control Accuracy	±0.1°C	
Temperature Stability	±0.1°C	
Display	4-digit LED Actual Temperature Display (Red) 4-digit LED Set Temperature Display (Green)	
Power Consumption	125W	160W
External Dimensions (W × D × H)	64mm × 105mm × 490mm	110mm × 105mm × 540mm
Column Dimensions (W × D × H)	45mm × 33mm × 360mm	82mm × 33mm × 400mm

Model: CH-600 Column Heater



Features

- A. Super size column heater: Ambient size 145mm × 380mm × 110mm (W × H × D)
- B. Three options of column height
- C. A powerful fan that can speed up the heating process and make complete circulation of the heat.
- D. Accurate temperature control and display: Microprocessor-controlled temperature device allows temperature accuracy to ±1°C.
- E. Easy installation with magnetic doorframe.
- F. Easy for observation: Transparent window is easy for monitoring the heating process.
- G. Safe anti-leaking design: A container placed under heating chamber can prevent liquid from leaking.
- H. Smooth pipe: Provide smooth connection between input and output ports to guarantee that liquid can pass through.

Specifications

Model	HPLC CH-600 Column Heater
Temperature Range	Room temperature to 75°C
Max Temperature	85°C
Temperature Increment	±1°C
Temperature Control Accuracy	±0.3°C
Temperature Stability	±0.2°C
Display	3-digit LED Actual Temperature Display (Red) 3-digit LED Set Temperature Display (Green)
Power Consumption	300W
External Dimensions (W × D × H)	185mm × 172mm × 530mm
Column Dimensions (W × D × H)	145mm × 110mm × 380mm

A05- HPLC CH-900 Column Heater



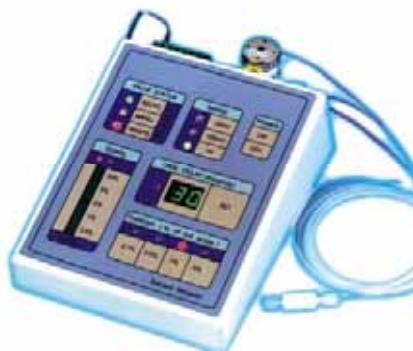
Features

- A. Powerful: Powerful cooling function enables temperature inside the heating chamber to lower than room temperature by 25°C.
- B. Convenient for use with temperature setting knob and LED display of actual temperature.
- C. Accurate: Experiments show temperature accuracy of ±0.3°C and better.
- D. Intelligent: The temperature controlling system can automatically choose to heat or to cool based on the room and set temperature.
- E. Flexible: Easy installation of temperature control unit to be suitable for vertical or horizontal arrangement of the column heater.
- F. Unified design enables convenient matching with HPLC system.

Specifications

Model	HPLC CH-900 Column Heater
Temperature Range	25°C below room temperature to 75°C
Max Temperature	80°C
Temperature Increment	±1°C
Temperature Control Accuracy	±0.5°C
Temperature Stability	±0.3°C
Display	3-digit LED Actual Temperature Display
Power Consumption	150W
External Dimensions (W × D × H)	185mm × 108mm × 490mm
Column Dimensions (W × D × H)	45mm × 26mm × 330mm

A06- Solvent Recycler



Descriptions

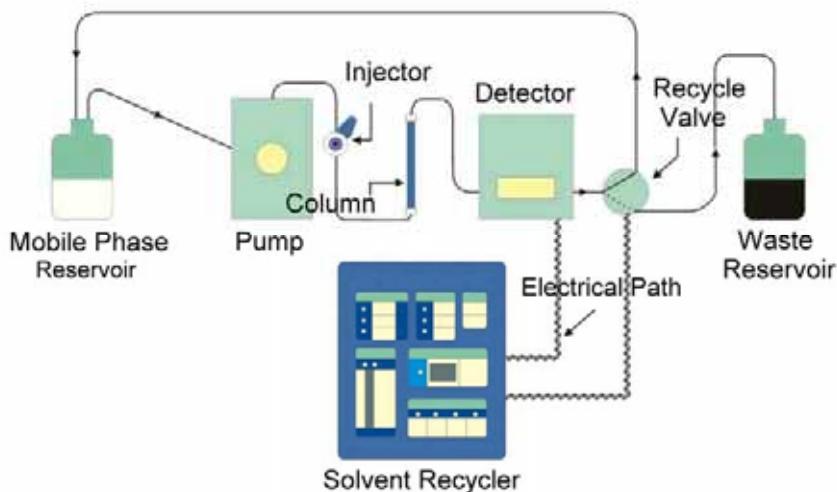
Intelligent mobile phase recycling is accomplished by placing an electronically actuated Recycle Valve in the fluid path between the HPLC detector and the solvent waste reservoir. The signal processor in the recycler controls the valve and monitors the detector signal to determine when peaks appear and when contaminants are passing through the detector flow cell. When a container is detected, the Recycle Valve is diverted to the solvent container. When there is no contaminant detected, the Recycle Valve will bring clean solvent back to the mobile phase reservoir for reuse.

Using this solvent recycler, you can immediately regain your initial investment and enjoy substantial saving of expense and time for years. In addition, this instrument can reduce pollution toward environment, making more efforts to environmental protection.

Features

- A. Recycle more than 90% of mobile phase.
- B. Manual and automatic program options allow user to control recycling and discarding of solvent.
- C. The purity of mobile phase can be controlled precisely by the 4-degree threshold switch.
- D. Time delay of the valve switch can be set from 10 to 90 seconds.
- E. The selectable three-range input degrees match various HPLC detectors.
- F. The polarity and the changing level of detecting signals are showed on the LED display.
- G. Auto zero setting.

Specifications



There are three parameter options:

A. Range: Range of this instrument (10mV, 100mV, or 1V) matches the HPLC detectors.

B. Threshold:

When the detector's output signal exceeds the selected Threshold value (0.1%, 0.5%, 1%, 5% of full scale), it represents it is the peak of contaminants. The Recycle Valve then sends the contaminated effluent to waste container. The Recycle Valve returns to the recycle position after the detector signal falls below the Threshold value and the Time Delay has elapsed.

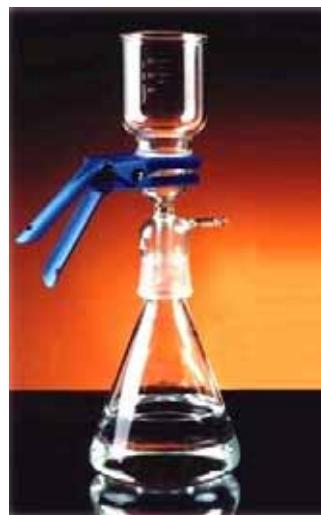
C. Time Delay:

It holds the Recycle Valve in the waste position for the specified amount of time (10, 20..., until 90 seconds) after the detector signal drops below the Threshold valve. The Time Delay accounts for tailing peaks and plumbing volume between the detector and the Recycle Valve.

With precise control of these three parameters, the solvent recycling can be accurately and reliably operated without interference.

Model	SRJ-50A Solvent Recycler
Recycle Valve	2 Position Electronically Actuated All wetted parts are Peek and TFE Fittings are 1/16", 1/4"-28 Flange-Free
Max Flow	50mL/min (As supplied with 1.5M 1/16" Tubing on each port)
Analog Input	10mV, 100mV and 1V
Display	Red and Green LED
Zero Setting	Automatic Zero Setting
Remote Input	Switch or TTL Signal
Power Requirement	13.5Volts DC/500mA
Dimensions	7.28" x 6" x 2.7" (L x W x H) (18.5cm x 14.2cm x 6.28cm)
Weight	2.21bs (1.0Kg)

A07- HPLC Filter Holder



FS-10, FS-20



FS-01

Descriptions

Widely used in gravimeter, microanalysis, colloid dispersion and bacteria-free experiments, this HPLC filter holder can filtrate and degas the mobile phase of HPLC analysis. Besides playing a critical role in lifetime extension of apparatus and HPLC column, the filter holder can enhance measurement accuracy.

The filtration bottles have high pressure endurance, fabulous interchange ability, and well-proportional wall. They are made according to international standard sizes so that they can match most products of foreign brands. In addition, the newly designed solvent pickup adaptor can filtrate or collect solvent directly from solvent bottle through film of filter. This new design makes the process of filtrating become easier and it can dramatically increase effectiveness and reduce air pollution.

Features

- A. High-quality and hard-glass materials that can endure more than 200 temperature difference.
- B. Elegant made with well-proportional wall.
- C. Good endurance of high pressure and fabulous interchange ability.
- D. Made according to international standard sizes that can match most foreign brand products.

Specifications

Packing list of FS-10 and FS-20

Glass Funnel: 47mm, 300ml

Plug

Fritted Glass Support Base: 47mm

Aluminum Clamp: 47mm

Erlenmeyer Flask: 1000ml (FS-10), 2000ml (FS-20)

Packing list of FS-01

Glass Funnel: 47mm, 300ml

Silicone Plug

Aluminum Clamp: 47mm

Fritted Glass Support Base: 47mm

Glass Cover

Beaker

Teflon Base

A08- Vacuum Manifold



Model: VM-12



Model: VM-24

Descriptions

Working Theory

This vacuum manifold equipment is a popular pre-treatment technique that has been widely applied in solid phase extraction (SPE). It is basically developed from LLE principle and it also combines application of HPLC and GC. Solid phase extraction (SPE), according to its principle, can be separated to four categories—RP-SPE, NP-SPE, IE-SPE, and SPE (Adsorption). In most cases, SPE is used in liquid sample processing for extraction, condensation, and purification. Solid phase extraction has practical applications in biological liquid, such as urine, blood, blood serum; analysis of food processing such as milk, wine, and juice. Other applications include PAHs and PCBs organic substance analysis, antibiotic and clinical medical analysis.

Application

This equipment of SPE has benefits of safety, high effectiveness, convenience, and less use of organic solvents. Its flexible settlement enables more convenient and easy operation. The basin is made of material of chemically resistant and vacuum-safe glass to provide excellent throughput.

Features

- A. Clearly marked ports and racks to ensure correct positioning of collection vessels.
- B. Compatible with standard SPE and filtration columns.
- C. Individually controlled stopcocks to permit flow control at each position.
- D. Basin is made of chemically resistant and vacuum-safe glass.
- E. Clear glass basin allows observation of fluids as they pass through columns.
- F. Different types of rack to accommodate 12 or 24 samples through collection columns.

Specifications

- A. Standard glass basin
- B. Collection rack that can accommodate 12 or 24 operating samples
- C. Standard collection column

B01- CT-8 Series Double Beam UV/Vis Spectrophotometer



Descriptions

- A. CT-8 Series are advanced double beam design consisting of two models; Stand-alone models: CT-8200 with 1.8nm fixed bandwidth and CT-8600 with 1.0 fixed bandwidth.
- B. The two detectors are measuring sample and reference respectively and simultaneously for optimizing measurement accuracy. They provide accurate measurement in the range of 190nm to 1100nm.
- C. All instruments provide excellent performance for measurements:
 - To Stand-alone models, all software methods are included as built-in standard, thus eliminating the need for software options.
 - On-line software upgrade capability via Internet helps to keep your software up-to-date.
 - Data Download-to-PC software expands the data storage to unlimited.
- D. This spectrophotometer is suitable for pharmaceutical, biochemical and clinical lab applications as well as routine applications such as quantitative analyses, kinetics, spectrum scanning, multiple components and DNA/Protein analysis.
- E. PC Windows® application software and built-in software make this instrument versatile.

Features

- A. PC models and Stand-alone models with large graphic LCD display (320 × 240) to directly show graphs on the screen.
- B. Unique pre-aligned deuterium lamp for easy lamp replacement to avoid optical adjustment.
- C. GLP self-calibrated function can automatically check wavelength and photometric accuracy using validation report.
- D. Powerful integrated software for data acquisition:
 - Quantitative
 - Kinetics
 - Wavelength Scanning
 - Multi-Wavelength
 - DNA/Protein
- E. Other features include:
 - System examination: Automatic wavelength check, automatic light filter detection, automatic energy detection, and other automatic functions.
 - Photometric switch: Able to switch light source in the specific range.
 - Photometric cutoff: Automatic cutoff of deuterium lamp and halogen lamp to extend their durability.
 - Power failure protection: Research data can be saved and restored when there is power failure.
 - Software: Application software can be connected to computer to control equipment operation and analyze experimental data.

Specifications

Model	CT-8200	CT-8600
Optical System	Double Beam, Grating 1200 lines/mm	
Wavelength Range	190-1100nm	190-1100nm
Spectral Bandwidth	1.8nm	1.0nm
Wavelength Accuracy	$\pm 0.3\text{nm}$	
Wavelength Repeatability	0.2nm	
Photometric Accuracy	$\pm 0.2\% \text{T}$	
Photometric Repeatability	$0.15\% \text{T}$	
Stray Light	$<0.05\% \text{T}$	
Baseline Stability	$\pm 0.0005 \text{A/h}$	
Baseline Flatness	$\pm 0.0005 \text{A} (200-1000\text{nm})$	
Display	LCD (320 × 240) & PC Model	LCD (320 × 240) & PC Model
Photometric Mode	T, A, E	
Scanning Speed	High, Med., Low. , Max. 3000nm/min	
Wavelength Setting	Automatic	
Photometric Range	-0.3-3 A, 0-200% T, 0-9999 Conc.	
Detector	Si Photodiode	
Light Source	Halogen & Deuterium Lamp (pre-aligned)	
Keyboard	Membrane Keypad or PC	
Output	USB Port & Parallel Port (Printer)	
Power Requirement	AC 220V/50Hz or AC 110V/60Hz	
Dimensions (W × D × H)	600mm × 450mm × 200mm	
Weight	27Kg	27Kg

Packing list

Spectrophotometer.....	1
Single cell holder for 10mm	1
SQ cuvette	
Mains Lead.....	1
Cuvettes.....	Set of 4, glass Set of 2, quartz
USB Cord	1
User Manual.....	1
UV-Vis Analyst Software.....	1
Software Manual.....	1

Optional accessories

8 position auto cell changer.
CYLINDRICAL CELL HOLDER
TEST TUBE HOLDER (ø8-Ø22mm)
LONG PATH CELL HOLDER
MICRO CELL HOLDER
WATER-JACKETED CELL HOLDER
PELTIER/SIPPER SYSTEM
REFLECTANCE MEACHMENT ATTACHMENT
PRINTER

B01- CT-5, CT-6 Series Single Beam UV/Vis Spectrophotometer



Descriptions

- A. CT-5, CT-6 Series are advanced single beam design consisting of 5 models. Different one with different bandwidth and wavelength accuracy. All of them provide excellent performance for measurement in the range of 190nm to 1100nm.
- B. CT-5, CT-6 series.
 - All software methods are included as built-in standard, thus eliminating the need for software options.
 - Online software upgrade via Internet helps to keep your software up-to-date.
 - Data Download-to-PC software expands the data storage to unlimited.
- C. The CT-5, CT-6 series are suitable for clinical lab applications, pharmaceutical and biochemical as well as routine applications such as quantitative analyses, kinetics, wavelength scanning, multiple components and DNA/Protein analysis.
- D. PC Windows® application software and built-in software make this instrument versatile.

Features

- A. PC models and Stand-alone models with large graphic LCD display (320×240) to directly show graphs on the screen.
- B. Unique pre-aligned deuterium lamp for easy lamp replacement to avoid optical adjustment.
- C. GLP self-calibrated function can automatically check wavelength and photometric accuracy using validation report.
- D. Powerful integrated software for data acquisition:
 - Quantitative—Establish or use stored calibration equation to measure the concentration of unknowns.
 - Kinetics—Measurement of absorbance changing vs. time with reaction rate calculation function.
 - Wavelength Scanning—Spectrum scan of sample at any selected wavelength range with choice of scanning speed and wavelength interval.
 - Multi-Wavelength—Measurement at multiple wavelengths to analyze and determine the composition of mixtures.
 - DNA/Protein—Calculation of concentration and DNA purity. Ratio at other wavelengths can be measured.
- E. Other features include:
 - System examination: Automatic wavelength check, automatic light filter detection, automatic energy detection, and other automatic functions.
 - Photometric switch: Able to switch light source in the specific range.
 - Photometric cutoff: Automatic cutoff of deuterium lamp and halogen lamp to extend their durability.
 - Power failure protection: Research data can be saved and restored when there is power failure.
 - Software: Application software can be connected to computer to control equipment operation and to analyze experimental data.

Specifications

Model	CT-5100	CT-5700	CT-6200	CT-6400	CT-6600			
Optical System	Single Beam, Grating 1200 lines/mm							
Wavelength Range	190-1100nm							
Spectral Bandwidth	4.0nm	2.0nm	1.8nm	0.5/1.0/2.0/4.0nm	1.0nm			
Wavelength Accuracy	$\pm 0.5\text{nm}$		$\pm 0.3\text{nm}$					
Wavelength Repeatability	0.3nm		0.2nm					
Photometric Accuracy	$\pm 0.3\% \text{T}$		$\pm 0.2\% \text{T}$					
Photometric Repeatability	0.2% T		0.15% T					
Stray Light	<0.05% T							
Baseline Stability	$\pm 0.002 \text{ A/h}$		$\pm 0.001 \text{ A/h}$					
Baseline Flatness	$\pm 0.002 \text{ A} (200-1000\text{nm})$		$\pm 0.001 \text{ A} (200-1000\text{nm})$					
Display	LCD (320 \times 240) & PC Model							
Photometric Mode	T, A, E							
Scanning Speed	High, Med., Low., Max. 3000nm/min							
Wavelength Setting	Automatic							
Photometric Range	-0.3-3 A, 0-200% T, 0-9999 Conc.							
Detector	Si Photodiode							
Light Source	Halogen & Deuterium lamp (pre-aligned)							
Keyboard	Membrane Keypad or PC							
Output	USB Port & Parallel Port (Printer)							
Power Requirement	AC 220V/50Hz or AC 110V/60Hz							
Dimensions (W \times D \times H)	480mm \times 360mm \times 160mm		600mm \times 450mm \times 200mm					
Weight	16Kg		25Kg					

Packing list

Spectrophotometer..... 1

Mains Lead..... 1

4 cell holder for 10mm SQ. 1

cuvette

Cuvettes..... Set of 4, glass
Set of 2, quartz

USB Cord 1

User Manual..... 1

UV-Vis Analyst Software..... 1

Software Manual..... 1

Optional accessories

SINGLE HOLDER FOR 10MM SQU.CUVT.

CYLINDRICAL CELL HOLDER

TEST TUBE HOLDER (ø8-Ø22mm)

LONG PATH CELL HOLDER

4-CELL HOLDER FOR UP TO 50MM SQU.CUVETTE

4-CELL HOLDER FOR UP TO 100MM SQU.CUVETTE

MICRO CELL HOLDER

WATER-JACKETED CELL HOLDER

PELTIER/SIPPER SYSTEM

8-POSITION AUTO CELL CHANGER

REFLECTANCE MEACHMENT ATTACHMENT

PRINTER

B01- CT-2500~CT2800 Series Spectrophotometer



Descriptions

- A. CT-2500~CT-2800 Series are developed for precise test for its stray light is only 0.05%T.
- B. This series have benefits of flexible, user-friendly, and maximized value. The value is evident from the performance provided every day.
- C. The local stand-alone software provides functions of basic model, quantitative test, kinetics, and system utilities.
- D. System can save research results up to 200 group of data and 200 curves in the RAM for random check and reload.

Features

- A. Large graphic LCD display (128×64) to directly show graphs on the screen, displaying a total of 200 groups of data, 5 groups per screen.
- B. Pre-aligned deuterium lamp for easy lamp replacement to avoid optical adjustment.
- C. Automatically check wavelength and photometric accuracy using validation report.
- D. Powerful integrated software for data acquisition:
 - Quantitative
 - Kinetics
 - Wavelength Scanning
- F. Other features include:
 - System examination: Automatic wavelength check, automatic light filter detection, automatic energy detection, and other automatic functions.
 - Photometric cutoff: Automatic cutoff of deuterium lamp and halogen lamp to extend their durability.
 - Power failure protection: Research data can be saved and restored when there is power failure.
 - Software: Application software can be connected to computer to control equipment operation and to analyze experimental data.

Specifications

Model	CT-2500	CT-2700	CT-2600	CT-2800
Optical System	Single Beam, Grating 1200 lines/mm			
Wavelength Range	320-1100nm		190-1100nm	
Spectral Bandwidth	4nm	2nm	4nm	2nm
Wavelength Accuracy	$\pm 0.5\text{nm}$			
Wavelength Repeatability	0.3nm			
Photometric Accuracy	$\pm 0.3\% \text{T}$			
Photometric Repeatability	0.2% T			
Stray Light	0.05% T (360nm)		0.05% T (220nm, 360nm)	
Baseline Stability	$\pm 0.002 \text{A/h} (500\text{nm})$			
Display	LCD (128 × 64)			
Photometric Mode	T, A, E			
Wavelength Setting	Automatic			
Photometric Range	-0.3-3 A, 0-200% T			
Detector	Si Photodiode			
Light Source	Tungsten lamp		Tungsten & Deuterium	
Keyboard	Membrane Keypad			
Output	USB Port & Parallel Port (Printer)			
Power Requirement	AC 220V/50Hz or AC 110V/60Hz			
Dimensions (W × D × H)	470mm × 370mm × 180mm			
Weight	14Kg		16Kg	

Packing list of CT-2600 and CT-2800

Spectrophotometer.....	1
Mains Lead.....	1
4 cell holder for 10mm	1
SQ.cuvette	
Cuvettes.....	Set of 4, glass
	Set of 2, quartz
Common software, User Manual	1

Packing list of CT-2500 and CT-2700

Spectrophotometer.....	1
Mains Lead, 4 cell holder	1
Cuvettes.....	Set of 4, glass
Common Software, User	1
Manual.....	

Optional accessories

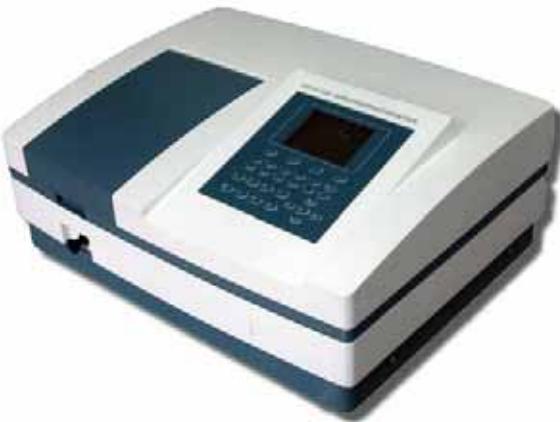
SINGLE CELL HOLDER FOR 10MM SQU.CUVT.
CYLINDRICAL CELL HOLDER
TEST TUBE HOLDER (ø8-Ø22mm)
LONG PATH CELL HOLDER
4-CELL HOLDER FOR UP TO 50MM SQU.CUVETTE
4-CELL HOLDER FOR UP TO 100MM SQU.CUVETTE
MICRO CELL HOLDER
WATER-JACKETED CELL HOLDER

PELTIER/SIPPER SYSTEM

PRINTER

ADVANCED PC WINDOW SOFTWARE

B01- CT-2300/CT-2400 Series Spectrophotometer



Descriptions

- A. CT-2300 and CT-2400 series spectrophotometer have attractive performance for general data. As long as you use your standard sample solution, you can get a standard curve on the large LCD screen by local control software. In addition, you can print the curve through USB or analog port.
- B. Functions of this instrument include:
 - Basic model—Absorbance, transmittance, or concentration measurement.
 - Quantitative
 - a) Standard Curve—At least 9 standard samples can be used to establish a standard curve. The curve and the curve equation will be displayed on the screen simultaneously to measure concentration of unknown solutions by the curve.
 - b) Coefficient Method—if you have known the coefficient of k&b of the formula $C=kA+b$, you can input the value and then test the unknown solutions.
- C. This instrument has been widely used in colleges and enterprises for general quantitative analysis and experiments.

Features

- A. Large graphic LCD display (128×64) to directly show graphs on the screen, displaying a total of 50 groups of data and being able to save the research data.
- B. Pre-aligned deuterium lamp for easy lamp replacement to avoid optical adjustment.
- C. Power failure protection: Research data can be saved and restored when there is power failure.
- D. Automatically check wavelength and photometric accuracy using validation report.
- E. Powerful integrated software for data acquisition for basic measurement and analysis.
- F. Other features include spectrum test, wavelength check, standard curve, and application software.

Specifications

Model	CT-2300	CT-2400
Optical System	Single Beam, Grating 1200 lines/mm	
Wavelength Range	325-1000nm	200-1000nm
Spectral Bandwidth	4nm	
Wavelength Accuracy	±1nm	
Wavelength Repeatability	0.5nm	
Photometric Accuracy	±0.5% T	
Photometric Repeatability	0.3% T	
Stray Light	0.3%T	
Baseline Stability	±0.002 A/h (500nm)	
Display	LCD (128 × 64)	
Photometric Mode	T, A, E	
Wavelength Setting	Automatic	
Photometric Range	-0.097-2.5 A, 0-125% T	
Detector	Si Photodiode	
Keyboard	Membrane Keypad	
Light Source	Tungsten lamp	Tungsten & Deuterium
Output	USB Port & Parallel Port (Printer)	
Power Requirement	AC 220V/50Hz or AC 110V/60Hz	
Dimensions (W × D × H)	480 x 360 x 160mm	
Weight	11Kg	12Kg

Packing list of CT-2400

Spectrophotometer.....	1	SINGLE CELL HOLDER FOR 10MM SQU.CUVT.
Mains Lead.....	1	CYLINDRICAL CELL HOLDER
4 cell holder for 10mm SQ. cuvette	1	TEST TUBE HOLDER (ø8-Ø22mm)
Cuvettes.....	Set of 4, glass	LONG PATH CELL HOLDER
	Set of 2, quartz	4-CELL HOLDER FOR UP TO 50MM SQU.CUVETTE
Common Software, User Manual	1	4-CELL HOLDER FOR UP TO 100MM SQU.CUVETTE PRINTER

Optional accessories

Packing list of CT-2300

Spectrophotometer.....	1
Mains Lead.....	1
4 cell holder for 10mm SQ cuvette	1
Cuvettes.....	Set of 4, glass
Common Software, User Manual	1

B01- CT-1500/CT-2200 Spectrophotometer



CT-1500



CT-2200

Descriptions

- A. CT-1500 is the only style of manual-setting wavelength function among CT spectrophotometers. Its precise design and high quality components ensure excellent performance.
- B. Because of its convenience this instrument has been widely used in high schools and colleges for general analysis and experiments.

Features

- A. High quality silicon photometric diode detector and 1200 lines/mm grating ensure high accuracy and precision.
- B. Digital display for easy readout.
- C. Pre-aligned deuterium lamp for easy lamp replacement to avoid optical adjustment.
- D. Auto zero setting for easy use and simple switch to transmittance, absorbance and concentration models.
- E. With RS-232C port, data can be exported to printer directly.
- F. Optional software based on Windows® can extend the application to standard curve and kinetics through the RS-232C port.

Besides features mentioned above, CT-2200 contains other features include:

- A. Large LCD display (128 × 64)
- B. Able to display and save 50 groups of data, 5 groups per screen.
- C. Data can be saved and restored when there is sudden power failure.
- D. Three-point method to measure concentration of unknown samples.
- E. Automatic cutoff of deuterium lamp and halogen lamp to extend their durability.

Specifications

Model	CT-1500	CT-2200
Optical System	Single Beam, Grating 1200 lines/mm	
Wavelength Range	325-1000nm	200-1000nm
Spectral Bandwidth	5nm	4nm
Wavelength Accuracy	±2nm	±1nm
Wavelength Repeatability	1nm	0.5nm
Photometric Accuracy	±0.5% T	
Photometric Repeatability	0.3% T	
Stray Light	0.5% T	0.3% T
Baseline Stability	±0.004 A/h (500nm)	±0.002 A/h (500nm)
Display	3.5 bits LCD	LCD (128 × 64)
Photometric Mode	T, A, E	
Wavelength Setting	Manual	Automatic
Photometric Range	-0.097-1.999 A, 0-125% T	-0.3-3A, 0-200% T
Detector	Si Photodiode	
Light Source	Tungsten lamp	Tungsten & Deuterium
Keyboard	Membrane Keypad	
Output	RS-232C Port	USB Port & Parallel Port (Printer)
Power Requirement	AC 220V/50Hz or AC 110V/60Hz	AC85~250V
Dimensions (W × D × H)	480mm × 360mm × 160mm	420mm × 280mm × 180mm
Weight	8Kg	15Kg

Packing list of CT-2200

Spectrophotometer.....	1
Mains Lead.....	1
4 cell holder for 10mm SQ.cuvette	1
Cuvettes.....	Set of 4, glass
	Set of 2, quartz
Common software, User Manual.	1

Optional accessories

SINGLE CELL HOLDER FOR 10MM SQU.CUVT.
CYLINDRICAL CELL HOLDER
TEST TUBE HOLDER (ø8-Ø22mm)
LONG PATH CELL HOLDER
4-CELL HOLDER FOR UP TO 50MM SQU.CUVETTE
4-CELL HOLDER FOR UP TO 100MM SQU.CUVETTE
PRINTER

Packing list of CT-1500

Spectrophotometer.....	1
Mains Lead.....	1
4 cell holder for 10mm SQ cuvette	1
Cuvettes.....	Set of 4, glass
Common software, User manual	1

Model	Optical System	Wavelength Range	Spectral Bandwidth	Kinetics	DNA/Protein	Scanning	Display	PC Software
CT-8600	Double Beam	190~1100nm	1nm	○	○	○	LCD 320*240	Analyst Software
CT-8200	Double Beam	190~1100nm	1.8nm	○	○	○	LCD 320*240	Analyst Software
CT-6600	Single Beam	190~1100nm	1nm	○	○	○	LCD 320*240	Analyst Software
CT-6400	Single Beam	190~1100nm	0.5/1.0/2.0/4.0nm	○	○	○	LCD 320*240	Analyst Software
CT-6200	Single Beam	190~1100nm	1.8nm	○	○	○	LCD 320*240	Analyst Software
CT-5700	Single Beam	190~1100nm	2nm	○	○	○	LCD 320*240	Analyst Software
CT-5100	Single Beam	190~1100nm	4nm	○	○	○	LCD 320*240	Analyst Software
CT-2800	Single Beam	190~1100nm	2nm	○	X	X	LCD 128*64	Common Software
CT-2600	Single Beam	190~1100nm	4nm	○	X	X	LCD 128*64	Common Software
CT-2400	Single Beam	200~1000nm	4nm	X	X	X	LCD 128*64	Common Software
CT-2200	Single Beam	200~1000nm	4nm	X	X	X	LCD 128*64	Common Software
CT-2700	Single Beam	320~1100nm	2nm	○	X	X	LCD 128*64	Common Software
CT-2500	Single Beam	320~1100nm	4nm	○	X	X	LCD 128*64	Common Software
CT-2300	Single Beam	325~1000nm	4nm	X	X	X	LCD 128*64	Common Software
CT-1500	Single Beam	325~1000nm	5nm	X	X	X	3.5 bits LCD	Common Software

B02- Ultrasonic Cleaner

Descriptions

Working Theory

Ultrasonic cleaner sends out high frequency shaking signal, which is converted into high frequency mechanical shaking, spreads in the solvent and produces thousands of tiny bubbles. These bubbles are formed and developed in the negative pressure area in the transferring process. Later, they are immediately closed in the positive pressure area. Instantaneous high pressure of more than 1000p is then produced and this process is called vacuum effect. It is just like a series of explosions which constantly heat the surface of the subject and reach the purpose of complete cleaning.

Incredible Cleaning Effect

Because of its special design, this instrument has improved both dissolution and emulsifications in solution. Besides, this ultrasonic cleaner has great degassing effect without causing pollution to environment; therefore it has been widely used in machinery, electronics, medical, chemical tests and other industries.

Applications

This ultrasonic cleaner series are an ideal instrument used in professional fields such as electronic apparatus, semiconductor chips, circuit panel, optical lens, audio magnetic recording heads, etc. It is also widely applied in biochemical, chemical, and medical fields. The power consumption of the ultrasonic cleaner ranges from 60W to 2000W, volume ranges from 3 liters to 22 liters, ultrasonic frequency varies from 40HKz, 60HKz.

B02- UC-B(H) Series Ultrasonic Cleaner



Features

- A. LCD screens to show actual time and set time.
- B. Power adjustment makes this instrument more available for various uses.
- C. Time adjustment.
- D. Rack and noise reduction chamber attached
- E. 40KHz (B): Strong cleaning effect
60KHz (H): Low noise and high penetration

Specifications

Model	UC-3120B(H)	UC-5150B(H)	UC10200B(H)	UC-20500B(H)
Capacity (L)	3L	6L	10L	22L
Exterior Dimensions (mm) (W×L×H)	265 × 160 × 240	320 × 175 × 290	330 × 270 × 290	530 × 350 × 335
Interior Dimensions (mm) (W×L×D)	235 × 135 × 100	300 × 150 × 150	300 × 250 × 150	490 × 295 × 150
Power Consumption (W)	120/100	180/150	280/250	500/420
Power Adjustment (%)	1 ~ 99	1 ~ 99	1 ~ 99	1 ~ 99
Ultrasonic Frequency (KHz)	40(B)/60(H)	40(B)/60(H)	40(B)/60(H)	40(B)/60(H)
Time Set (min)	1 ~ 999	1 ~ 999	1 ~ 999	1~ 999
Water Outlet	No	No	Yes	Yes
Exterior Material	Aluminum	Aluminum	Aluminum	Aluminum

B02- UC-BDT Series Ultrasonic Cleaner



Features

- A. LCD screens to show actual time and set time
- B. Time adjustment
- C. Power adjustment
- D. Dual frequency: 40KHz and 60KHz
- E. Heating temperature control

Specifications

Model	UC-7240BDT	UC-10200BDT	UC-20500BDT
Capacity (L)	7L	10L	22L
Exterior Dimensions (mm) (W×L×H)	530 × 160 × 270	330 × 270 × 290	530 × 350 × 335
Interior Dimensions (mm) (W×L×D)	470 × 135 × 100	300 × 250 × 150	490 × 295 × 150
Power Consumption (W)	240/200	280/250	500/420
Power Adjustment (%)	1-99	1-99	1-99
Ultrasonic Frequency (KHz)	40/60	40/60	40/60
Time Set (min.)	1 ~999	1 ~ 999	1 ~ 999
Heating Temperature Control	Ambient+5-80°C		
Heating Power Consumption (W)	500	1000	1000
Water Outlet	Yes	Yes	Yes
Exterior Material	Stainless steel	Aluminum	Aluminum

B03- Ultrasonic Processor



Descriptions

Working Theory

The ultrasonic power supply generates high frequency electrical signals, which is applied to the piezoelectric crystals within the converter, where it is changed to mechanical vibration. The longitudinal vibrations are amplified by the probe and transmitted to the cleaning liquids, which consist of alternate compression and rarefactions. These pressure fluctuations create microscopic bubbles, which expand during the negative pressure excursions, and implode violently during the positive excursions. As the bubbles collapse, millions of shock waves (extreme in pressure and temperature) are generated at the implosion sites. This pressure is then used for disruption of cell structure.

Applications

This ultrasonic equipment includes a variety of applications such as disruption of cell structure, e.g. bacteria, virus, spores. Besides, it also has functions to homogenize, emulsify, intermix, degas, disintegrate, and so forth. Therefore, it has been widely used in research of biology, medical science, chemical, food, cosmetics, environmental protection, and other related industries.

Features

- A. Convenient and precise digital display and control.
- B. Variable safe control of power output to protect samples.
- C. Output amplitude can be adjusted according to the Tip Size.
- D. Intensity display with max intensity control.
- E. Two operation options are available: pulse modulation and constant output.
- F. Pulse width and interval time can be set from 0.1 to 9.9 secs. during pulse working.
- G. External control interface is available for direct operation.
- H. Frequency: 20 KHz

Specifications



Introduction of front panel

1. Liquid crystal display
2. Max intensity: the button is to control the ultrasonic output intensity. It has 4 levels: 5mm, 5-8mm, 8-10mm and 10mm.
3. Intensity: can change according to the Tip size.
4. Number inputting button
5. Start/Stop: operate or stop button.
6. Mode: The change button between pulse modulate and constant output.
7. Pulse: To set the output amplitude in constant operation. Imputing the number can set the time. Pulse wide is from 0.1 to 9.9 secs.
8. Timer: Display shows the set time and the time remaining in minutes and seconds.

Notice: Interval pulse modulates can prevent accumulating too much heating in the liquid and so can offer more effective result. The temperature can be set and controlled.

Model	Power (W)	Converter	Sample Volume
UP-100	100	1/8", 3/16"	100ul~80ml
UP-500	500	1/8", 3/16", 1/4", 1/2"	250ul~600ml
UP-800	800	1/8", 3/16", 1/4", 1/2", 3/4"	250ul~1200ml
UP-1200	1200	1/8", 3/16", 1/4", 1/2", 3/4"	250ul~1200ml

* Our Ultrasonic Processor is equipped with Converter, Tip (UP-100: 1/8"; UP-500: 1/2"; UP-800: 1/2"; UP-1200: 3/4"), Sound Abating Enclosure, Elevator, Temperature Control Sensor, External Pedal Switch, Power Cord.

* The watt shown is the highest power output.

Tip/Converter Model:

1/8" (3mm), 3/16" (5mm), 1/4" (6mm), 1/2" (13mm), 3/4" (19mm)

B03-Hand-held Ultrasonic Processor



Model: UP-80

Descriptions

Working Theory

The ultrasonic power supply generates high frequency electrical signals, which is applied to the piezoelectric crystals within the converter, where it is changed to mechanical vibration. The longitudinal vibrations are amplified by the probe and transmitted to the cleaning liquids, which consist of alternate compression and rarefactions. These pressure fluctuations create microscopic bubbles, which expand during the negative pressure excursions, and implode violently during the positive excursions. As the bubbles collapse, millions of shock waves (extreme in pressure and temperature) are generated at the implosion sites. This pressure is then used for disruption of cell structure.

Model	Power (W)	Converter	Sample Volume
UP-80 Frequency: 20 KHz	80	1/8"	100ul~80ml

The Hand-held Ultrasonic Processor is equipped with Converter Probe 1/8", Power Cord.

The Hand-held Ultrasonic Processor is easy to operate.

1. Connect the probe connection line to the processor.
2. Connect the power.
3. "ON"Switch on the processor.
4. Put tip into the sample, and continuously press the red button on the probe to start. If not pressing the red button, the motion will stop.

B04- Pressure Blowing Concentrator



SC-2800D



SC-2800W

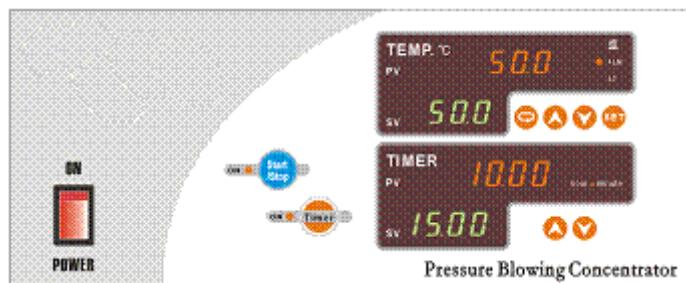
Descriptions

This equipment is designed to apply to preparative samples in chromatography, or mass spectrographic analysis. It adopts the international approval method to proceed with sample concentration by introduction of nitrogen to heat up the surface. This pressure blowing concentrator has benefits of time-saving, easy-control, and user-friendly, and it can soon achieve anticipated results. It enables rapid samples of separation and purification by applying solid phase extraction (SPE) process to replace conventional liquid extraction and chromatography procedures.

Features

- A. Gas is ducted above the solution surface in a vial through a switching valve and a needle.
- B. SC-2800W Water bath rack can be placed in the tank or out of the tank, and the rack can be fixed at any height of the crutch.
- C. SC-2800D Dry bath uses aluminum block as conducting interface for quick heating and temperature control.
- D. Heating blocks of variable holes and accompanied needles are available. Tubes are separately placed on the rack without causing cross contamination.
- E. Special design of water container to prevent the inner elements from damage of leaking liquid.
- F. Thicker aluminum heating block can provide more even and precise temperature. Actual temperature is measured by the built-in temperature sensor.
- G. Two sets of dual 4-digit display to separately show set/actual temperature and set/operating time.
- H. Automatic temperature protection alarm guarantees safe and reliable operation.

Specifications



SC-2800D-12

Model	SC-2800W Water Bath	SC-2800D Dry Bath
Heating Samples	12, 24, 40 tubes	
Temperature Range	Room temperature + 5°C ~ 180°C	
Max Temperature Protection	185°C	
Max Temperature	Set temperature + 5 °C	
Temperature Accuracy	±0.1°C	
Time Set	10min~99hr 59min	
Power Consumption	350W	
Holes of Heating Block (SC-2800D)	Standard size 6/12/20 holes Double size 12/24/40 holes	
Dimensions of Heating Block (SC-2800D)	2 Standard size: 95mm × 70mm × 75mm (W × H × L) 1 Double size: 150mm × 70mm × 95mm (W × H × L)	
External Dimensions (W × D × H)	240mm × 130mm × 215mm (rack height is not included)	

SC-2810D Series (Larger opening size)

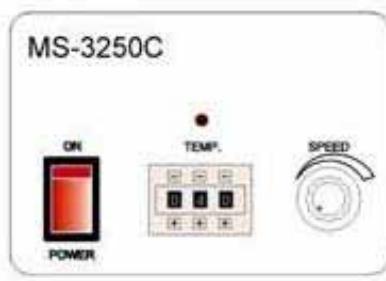
Model	SC-2810D-8 (8 tubes)	SC-2810-D-12 (12 tubes)
Temperature Range	Room temperature + 5°C ~ 300°C	
Max Temperature Protection	385°C	
Max Temperature	Set temperature + 5°C	
Temperature Accuracy	±0.1°C	
Operating Temperature	5°C ~ 35°C	
Time Set	10min ~ 99hr 59min	
Power Consumption	1350W	
Holes of Heating Block	8/12 holes	
Dimensions of Heating Block	210mm × 95mm × 150mm (W × L × D)	
External Dimensions (W × D × H)	268mm × 230mm × 165mm (rack height is not included)	

B05- Magnetic Stirrer

Descriptions

The working theory of this product is using micro electrical machinery to drive the heatproof magnet to spin, thus creating a magnetic field. This magnetic field will drive the stir bar to spin in the container and later it will cause spin of the solvent. Meanwhile, it can heat the solvent so that it can be fully mixed at set temperature. This product has been widely applied in biology, medicine, chemistry, chemical engineering and other related fields.

B05- MS-3250C Magnetic Stirrer



Features and Specifications

- A. Constantly adjustable stirring speed and heating temperature.
- B. Heating plate is made out of aluminum alloy and coated with Teflon to provide excellence of heat conductivity, heat/cold proof and corrosion resistance.
- C. Double heat insulation design is applied in the bottom of the heating plate to improve the heating efficiency and can avoid the heat transmitting to the case.
- D. The one-piece shaping case and the convex design on the top can prevent the electronic parts from damaging of spilling solvent.
- E. Unique design that can control and display the plate temperature at the same time control temperature of the solvents in the container through temperature sensor.

Model	MS-3250C		
Speed (rpm)	100 ~ 1700	Temperature Sensor	Yes
Max Stirring Volume	10L	Counterclockwise Function	No
Temperature Range	Room temperature~199°C	Heating Plate Diameter	150mm
Max Temperature	300°C	Max Power Consumption	250W
Temperature Accuracy	±2°C		

* Temperature Range: The highest temperature of liquid; Max Temperature: The highest temperature of hot plate

Model # MS-5250 A/B/C Magnetic Stirrer



Features

1. Stirring and heating speeds are always adjustable. (Heating function only for MS-5250B and MS-5250C)
2. Heating plate is made of aluminum alloy and coated with Teflon, providing excellent heat conduction, heat/cold resistances and corrosion proof.
3. Double heat insulation design is applied in the bottom of the heating plate which can improve the heating efficiency and can prevent heat from transmitting into the case.
4. The case unit has a convex design on the top which prevents the electronic part being damaged from spilled solvent.
5. The unique design and can be selected properly controlled by display panel displays the heating temperature, and by the external temperature sensor to control the temperature of the liquid in the container.

Specifications

Model	MS-5250A	MS-5250B	MS-5250C
Speed (rpm)	100 ~ 1700	100 ~ 1700	100 ~ 1700
Max Stirring Volume	10L	10L	10L
Temperature Range	Room temperature~199°C	Room temperature~199°C	Room temperature~199°C
Max Temperature	350°C	350°C	350°C
Temperature Accuracy	--	±2°C	±2°C
Temperature Sensor	--	Yes	Yes
Counterclockwise Function	No	No	Yes
Heating Plate Diameter	150mm	150mm	150mm
Max Power Consumption	350W	350W	350W
Dimensions (W × D × H)	198mm × 225mm × 115mm		
Weight (Kg)	2.4Kg	2.4Kg	2.4Kg

B05- Multi Position Magnetic Stirrer

Descriptions

The working theory of this product is using micro electrical machinery to drive the heatproof magnet to spin, thus creating a magnetic field. This magnetic field will drive the stir bar to spin in the container and later it will cause spin of the solvent. Meanwhile, it can heat the solvent so that it can be fully mixed at set temperature. This product has been widely applied in biology, medicine, chemistry, chemical engineering and other related fields.

Multi-Position Magnetic Stirrer



Specifications

Model	MMS-6	MMS-9	MMS-12
Stir the position number	6	9	12
Speed (rpm)	0 ~ 1500 rpm		
Max. stirring volume (Each position)	0.4 L		
Distance of each position	90 mm		
Heating plate material	Stainless steel		
Dimensions (W × D × H)	278 × 298 × 55mm	278 × 388 × 55mm	278 × 498 × 55mm

※ The ones that can control each seat and click separately to stop work.

B05- Multi Position Magnetic Stirrer

Descriptions

The working theory of this product is using micro electrical machinery to drive the heatproof magnet to spin, thus creating a magnetic field. This magnetic field will drive the stir bar to spin in the container and later it will cause spin of the solvent. Meanwhile, it can heat the solvent so that it can be fully mixed at set temperature. This product has been widely applied in biology, medicine, chemistry, chemical engineering and other related fields.

Multi-Position Magnetic Stirrer (Heating)



Specification

Model	MMS-6T	MMS-9T	MMS-12T
Stir the position number	6	9	12
Speed (rpm)	0 ~ 1500 rpm		
Max. stirring volume (Each position)	0.4 L		
Distance of each position	90 mm		
Temperature Range	Room temperature~120°C		
Heating plate material	Aluminum Coating Teflon		
Max. power consumption heating	240W	360W	480W
Dimensions (W × D × H)	278 × 298 × 55mm	278 × 388 × 55mm	278 × 498 × 55mm

※The ones that can control each seat and click separately to stop work.

B06- Shaker, Thermo Mixer Incubator, Multi-Tube Vortexer

(Shaker)



SH-50ARCS



SH-50AFS



SH-100AVS

Descriptions

- A. There are various types of shakers available, including orbital shaking motion, circular shaking motion, and horizontal shaking motion.
- B. Time adjustment: operation of set time (3 ~ 60min) or continuous.
- C. Shakers are made of materials of high thermostability, anti-acid and anti-alkali materials, having good endurance.
- D. Shaker base has four stationary suckers to prevent any migration of work.

Features

- A. Adjustable speed from 0 to 150rpm.
- B. Able to be placed in a temperature chamber with max temperature to 80°C
- C. Especially ideal for fermentation and cell culture.

Specifications

Model	SH-50AFS	SH-50ARCS	SH-100AVS
Speed Range	0 ~ 150rpm	0 ~ 350rpm	0 ~ 2500rpm
Vibrating Motion	Orbital	Horizontal	Circular
Vibrating Displacement	--	10mm	4.5mm
Max Load	2Kg	3Kg	1Kg
Time Set	3~60min or continuous	3~60min or continuous	3~60min or continuous
Weight (Kg)	2.4Kg	2.7Kg	8.2Kg

Size of plate: 20cm x 28cm x 1.5cm

Plate assembly: conical flask, 50ml *8 sets, or 100ml *5sets, or 200ml *2 sets

Standard stainless holder with our products: 50ml *2, 100ml *2 and 200ml *2

B06- Shaker, Thermo Mixer Incubator, Multi-Tube Vortexer



TMI-100C / TMI-100H Thermo Shaker Incubator

Descriptions

TMI-100C/TMI-100H Thermo Shaker Incubator is thermo shaker incubator with fast mixing speed and integrates four kinds of function mixing, shaking, heating function and Cooling function. (TMI-100H integrates three kinds of function mixing, shaking and heating function.) Combined with intelligent operation design, it not only can mix various micro volume tube, PCR plate, deep hole plate and micro plate and other common laboratory supplies, but also equipped with the function of votexing and heating all kinds of tubes. It can meet the needs of different users.

Product Features

1. Perfect radius and excellent dimensional technology blend with adjustable mixing speed.
2. High efficient shaking and temperature control and with programmable function.
3. Multiple safety protection function conforms to CE safety standards, safe and reliable.
4. Microprocessor controlled and accurate temperature and speed control, small fluctuation.
5. Timing function, set time between 0-100 hours freely.
6. Various blocks for option, convenient replacement.
7. Built-in temperature calibration and short mixing function.
8. Power recovery function, the instrument can restore to run according to the original setting automatically after power failure recovery.

3-in-1 module

1. Plate (shaking and mixing)
PCR plates (skirted, semi-skirted, unskirted)
384 hole PCR plate
96- and 384- deepwell plates
MTP, enzyme labeled plate
2. Tube stands (shaking and mixing)
0.2ml PCR tubes and PCR strips stands
0.5ml Micro-test tubes stands
1.5ml/2.0ml Micro-test tubes stands
3. Blocks (shaking, Mixing, incubator)
Refer to “Exchangeable blocks for TMI-100H/TMI-100C series”

Specifications		
Model	TMI-100C Shaker Incubator (cooling)	TMI-100H Shaker Incubator (heating)
Temperature Control Range	0°C— 100°C	+ 5°C— 100°C
Block temperature uniformity		≤±0.3°C
Temperature Control Accuracy		±0.3°C
Display Accuracy		0.1°C
Shaking Speed	300 — 1500 rpm	300 — 2000 rpm
Shaking Orbit		3mm (horizontal)
Timing Range		99h59min
Heating Time		<15min (from 20°C— 100°C)
Cooling Time	≤25min from ambient to ambient—20°C (detect at 30°C of ambient temperature)	--
Cooling Speed	≥7°C/min (from 100°C to 20°C) ≥1.2°C/min (from ambient to ambient — 20°C)	--
Maximum power		200W
Dimension (LxWxH)		270x190x170mm
Net Weight	8.3 kg	6.8 kg
Block Selection	Refer to “Exchangeable blocks for TMI-100C/TMF-100H”	

Exchangeable blocks for TMI-100C/TMI-100H

Type	Parameter	Max.
TMI-A	96 x 0.2ml PCR plate	100°C
TMI-B	54 x 0.5ml	100°C
TMI-C	35 x 1.5ml	100°C
TMI-D	35 x 2.0ml	100°C
TMI-E	15 x 0.5ml + 20 x 1.5ml	100°C
TMI-F	24 x dia. ≤ Ø 12mm	100°C
TMI-G	32 x 0.2ml + 25 x 1.5ml	100°C
TMI-H	32 x 0.2ml + 10 x 0.5ml + 15 x 1.5ml	100°C
TMI-I	103 x 67 x 30	100°C
TMI-J	96 x 0.2 ml plate (no holes)	100°C

** TMI-100C/TMI-100H is equipped with a block type of your selection.

B06- Shaker, Thermo Mixer Incubator, Multi-Tube Vortexer



MM-3000 Smart Mixer

Descriptions

MM-3000 smart is a compact mixer with a high efficiency, multiple functions. It integrates design principle of mixing and shaking with intelligent operation and can be applied to a variety of mixing and vortex shaking operation. It not only can mix various micro volume tube, PCR plate, deep hole plate and micro plate and other common laboratory supplies, but also equips the function of vortexing all kinds of tubes. Unique design principle, which combines mixing and shaking with intelligent operation make the operation simpler, safe, and convenient.

Product Features

The perfect radius and excellent dimensional technology blend with adjustable mixing speed ensure rapid and perfect process.

3-in-1 module

1. Plates

PCR plates (skirted, semi-skirted, unskirted)

384 hole PCR plate

96- and 384- Deepwell plates

MTPs, enzyme labeled plate

2. Tubes

0.2ml PCR tubes and PCR strips

0.5ml Micro-test tubes

1.5ml Micro-test tubes

2.0ml Micro-test tubes

3. Vortexing numerous tubes

Product Application

Controllable fast mixing make good experimental conditions uniformity between hole and hole /tube and tube, thus it can improve the reproducibility.

- * Preparation of PCR reaction system
- * Precipitation suspension (such as bacteria, DNA, cell culture precipitation)
- * Incubation (ELISA enzyme immunoassay analyzer)
- * protein staining quantitative (such as Bradford, Lowry, BCA)
- * Report gene assays (such as β -galactosidase, luciferase analysis)
- * Premixed reacition system
- * Mixing various kind of tubes

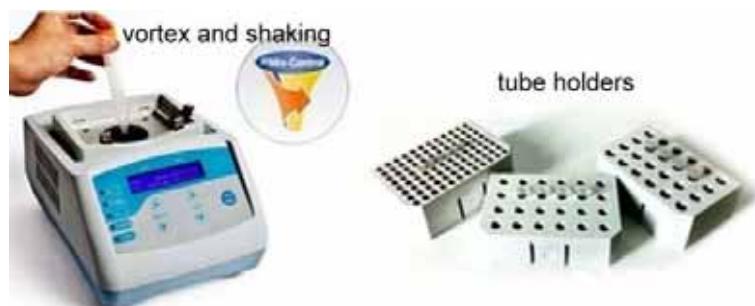
Specifications

Model	MM-3000 Mix Smart
Shaking speed range	300— 3000 rpm(Increment: 10rpm)
Vortex Shaking speed range	3500 rpm
Mixing time	1s—99h59min, continuous
Orbit	3mm mixing Orbit
Noise	< 52 db
Weight	4.5 kg
Dimensions	270*190*170mm
Power supply	AC100~230V, 50-60Hz, 45W

MM-3000 Equipped with three tube holders :

- A. 96 x 0.2ml 96 x 0.2ml PCR Tube holders, applied in 0.2ml PCR tubes and PCR strips, 96 hole PCR plate (skirted, Unskirted)
- B. 24 x 0.5ml Tube holders
- C. 24 x 1.5/2.0ml Tube holders

Remarks, 96 hole skirted PCR plate, 384 hole PCR plate, Deep plate, well plate, can be directly put into the mix without holders.



B06- Shaker, Thermo Mixer Incubator, Multi-Tube Vortexer



MTV-2500 Multi-Tube Vortex Mixer

Descriptions

MTV-2500 Multi-Tube Vortex Mixer can process 50 samples at the same time. A variety of accessories can be selected for choice to meet the mixing needs of different specifications of test tube. Humanized program design, built-in two operation modes: short mix and timing mix, which make the experiment more convenient and efficient.

Product Features

1. Can process 50 samples at the same time to make the experiment more convenient and efficient.
2. Simple operation panel and Microprocessor control, LED display speed and time.
3. Humanized program design, built-in two operation modes: short mix and fixed timing, stable and quite.
4. Equipped with a 12mm tube frame (B type) and a set of tray pad.
(A variety of models of foam test tube rack for option.)

Specifications

Model	MTV-2500 Multi-Tube Vortex Mixer
Speed range	500— 2500 rpm
Speed accuracy	± 50rpm (at 2500rpm detection)
Timing range	1s—9999min
Working diameter	4mm
Maximum load	5 kg
Top panel size	311 x 184 mm
Dimensions and weight	245 x 416 x 410 mm/ 21.5 kg
Power supply	AC100~230V, 50/60Hz, 60W

Optional tube holder accessories

Type	Detail	holes	Dimension (mm)
MTV-A	50 x Ø10mm tube holder	50	245 x 132 x 45 mm
MTV-B	50 x Ø12mm tube holder	50	245 x 132 x 45 mm
MTV-C	50 x Ø13mm tube holder	50	245 x 132 x 45 mm
MTV-D	50 x Ø16mm tube holder (15ml tube)	50	245 x 132 x 45 mm
MTV-E	15 x Ø25mm tube holder	15	245 x 132 x 45 mm
MTV-F	15 x Ø29mm tube holder (50ml tube)	15	245 x 132 x 45 mm
MTV-H	Tray Pad Set (Upper & Lower)	/	305 x 178.5 x 25mm



B07- Peristaltic Pump (A)



TP-100



TP-200



TP-400T



TP-100T



TP-200T



TP-800T

Descriptions

Working Theory

TP-100,200,400,800 series type Peristaltic Pump is a newly developed basic type. In addition to offering rotation speed control and direction control, it also offers outward connection and computer software based control. (Besides, timing control—run time and interval time setting—is installed within type TP-100T, TP-200T, TP-400T, and TP-800T)

Features such as lower noise, easy operating, stable functioning, data preservation with sudden electricity out, heavy flow, and timing function have made this model ideal within fields such as environmental studies, medicine, food science, chemical engineering as well as within college laboratories and other relative professions.

Specifications

Model #	TP-100	TP-100T	TP-200	TP-200T	TP-400T	TP-800T
Display	4-digit LED	6-digit LED	4-digit LED	6-digit LED	6-digit LED	6-digit LED
Flow path	1	1	2	2	4	8
Speed range	1-150 rpm	1-150 rpm	1-150 rpm	1-150 rpm	1-150 rpm	1-150 rpm
Fluid range	10-14500ml/h	10-14500ml/h	2×(10-14500) ml/h	2×(10-14500) ml/h	4×(1-2300)ml/h	8×(1-2300)ml/h
Flow precision:	±2%	±2%	±2%	±2%	±2%	±2%
Time set	--	1sec.~9h.59m. 59s	--	1sec.~9h.59m. 59s	1sec.~9h.59m. 59s	1sec.~9h.59m.59s
Max Liquid Pressure	3 kgs/cm2	2.5 kgs/cm2	3 kgs/cm2	2.5kg/cm2	3 kg/cm2	3 kg/cm2
External Dimensions (WxHxD) mm	110x155x290	110x155x290	110x155x340	110x155x340	110x155x280	110x155x310

Packing list

1. User's manual x 1
2. Power line x 1
3. A Connecting wire x 1 (for connect with Fraction Collector)
4. A Software for connecting PC
5. Fuse (1A) x 2
- 6.. Silicon Tube :

TP-100 (T), TP-200(T) : (Φ3.1×6.3、Φ4.8×8.0) 200cm each

TP-400T :(Φ2.2×4.2) 100cm x 4

TP-800T :(Φ2.2×4.2) 100cm x 8

B07- Peristaltic Pump (B)



Descriptions

Working Theory

When you press the soft pipe filled with liquid, the liquid inside the pipe will move forward along with the movement of the finger. This instrument applied this basic principle but replace the finger with the pump head to transport the liquid. This peristaltic pump is especially useful because the tube and the pump head configuration can be chosen based upon customer's requirements.

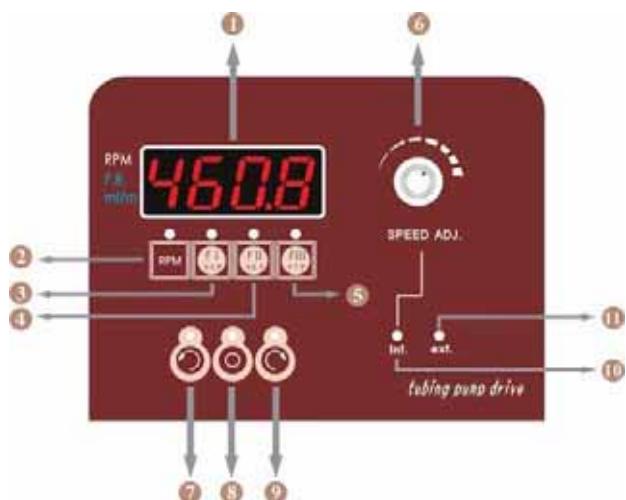
Applications

Peristaltic pump has long been an ideal equipment used in biochemistry, pharmaceutical products, viscous, corrosive and corrosive fluids; widely used in food, chemistry, waste processing industries and other related fields.

Features

- A. Avoid pollution: Fluid is completely transported in the tube; the pump and the fluid are free from pollution.
- B. Ideal equipment for biochemistry, pharmaceutical products, viscous, corrosive and corrosive fluids; widely used in food, chemistry, waste processing industries and other related fields.
- C. Precise measurement: Low-pulse pump conforms to the high accuracy current capacity requirement of the liquid.
- D. Easy to maintain: It takes only a few minutes to change transmission fluid; no valves or other sealing components to avoid maintenance cost.
- E. Special design for pump lock of each size to enable long-term use of the tube.
- F. Instant start and stop of the tube ensure more precise control of the fluid.
- G. Enable to drive 1 to 3 pumps with easy connection.
- H. Unique digital design makes working operation very fluent and precise.
- I. Large 4-digit LED display allows speed resolution to 0.1rpm.

Specifications



Introduction of front panel

1. rpm/f.r. display window, the displayed content in the window is separately controlled by 2345 button.
2. RPM button, press this button, the display window displays the rpm value of the pump head.
3. "F I" fluid rate No.1 (fluid rate display when use ø4.8mm inner diameter tube)
4. "F II" fluid rate No.2 (fluid rate display when use ø6.4mm inner diameter tube)
5. "F III" fluid rate No.3 (fluid rate display when use ø7.9mm inner diameter tube)
6. Speed control knot under internal control mode. It is not useful when the pump is under external control mode.
7. Pump head start button~anti-clockwise direction.
8. Pump head stop button.
9. Pump head start button~clockwise direction.
10. Indicator for external control mode.

Tube Installation

Turn the lock handle to the left to open the lock.	Insert the tube into the head of the lock.	Turn the lock handle to right to close the lock.

Model	Peristaltic Pump
Display	4-digit LED display
Display Speed Range	1 ~ 460rpm (Adjustable)
Speed Resolution	0.1rpm
Speed Stability	≤ 0.3rpm
Max Liquid Pressure	1.5Kg/cm ²
Fluid Direction	Reversible
Sample Viscosity	2000cps
Sample Temperature	-10 ~ 100°C
Operating Temperature	0 ~ 50°C, corresponsible temperature < 80%
Power Consumption	150W
Power Supply	110V or 220V ± 15%
Weight	5.5Kg
External Dimensions (W×H×D)	120mm × 230mm × 270mm

Specifications of tube

Tube no.	14#	25#	17#	18#
Inner diameter (mm)	1.6	4.8	6.7	7.9
Wall thickness (mm)	1.5	1.5	1.5	1.5
Fluid range (ml/min)	0.21-100	1.7-1000	2.8-1550	3.8-2060
Length (cm)	70	70	70	70

Packing list

1. A TP-320 pump
2. A TP-320 head
3. Lock × 4
4. #14 tube × 2
5. #25 tube × 1
6. #17 tube × 1
7. #18 tube × 1
8. Power line
9. User manual

B08- Vacuum Pressure Pump



DP-02



DP-08



DP-01

Descriptions

CT vacuum pressure pump is an adjustable pump with a unique method of adjusting pressure. It uses the pressure sender to detect the pressure in the system and then readjusts the pump's working period. This series of vacuum pressure pumps still maintain stable pressure even when the current changes. With main parts made of Teflon, PTFE resin, these advanced pumps can endure large volume flow and high pressure to meet requirements of many filter systems. Having separate negative and positive pressure connectors and stable pressure for experiment samples of extraction and purification, this equipment has been applied to many fields, especially in biochemistry.

Specifications

Model	DP-02	DP-08	DP-01
Vacuum Pressure (Kpa)	0 ~ 80 (Adjustable)	0 ~ 80 (Adjustable)	80
Max Positive Pressure (Psi)	18	20	18
Capacity (ml/min)	10000	20000	12000
Power (VA)	45	100	80
Dimensions (W × H × D) (mm)	230 × 85 × 200	292 × 180 × 155	210 × 150 × 120

Features

DP-02

- A. Flat shape perfect for placement under lab benches.
- B. Accurate, reliable dual LED pressure display.
- C. Convenient knob for adjustment of vacuum pressure.
- D. Separate positive and negative joints allow this instrument wider application.

DP-08

- A. An optional function to adjust pressure and flow volume.
- B. Dual-head pump offers more capacity over single head pump.
- C. Convenient for choosing working way to be series connection or parallel connection.

DP-01

- A. Convenient for operation.
- B. Small size design.

B09- Dry Bath



Descriptions

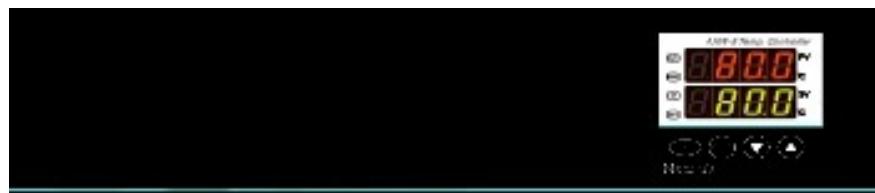
This equipment is popularly used in chemical engineering and biochemistry researches. It is mainly formed of two parts: multifunction heater and heating block. There are two types of multifunction heater, including digital control and microprocessor control. The former can satisfy most needs of user, while the latter provides higher temperature accuracy. Heating blocks have two standard sizes with many different aperture diameters mostly compatible with foreign equipments. This dry bath can accommodate two standard-size blocks or one double-size block.

Features

- A. Microprocessor thermal control allows higher temperature accuracy.
- B. Aluminum block interface provides good conductivity and even temperature to allow rapid heating and precise thermal control.
- C. Automatic alarm of max temperature protects the device from damages of over high temperature.
- D. Two 4-digit panels separately display set temperature and actual temperature.

Specifications

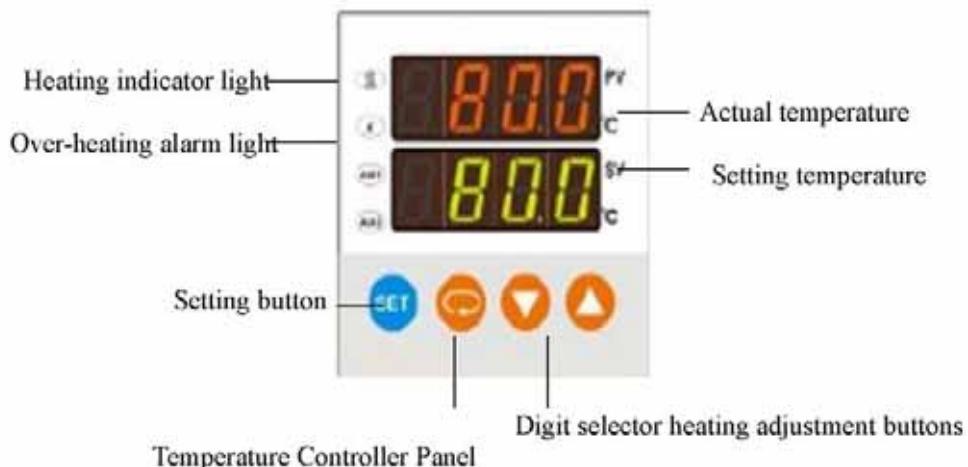
Model	DMH-2800A	DMH-2800D
Temperature Range	Room temperature + 5°C ~ 200°C	
Temperature Stability	±0.1°C	±0.1°C
Temperature Accuracy	±0.15°C	±0.15°C
Max Temperature	Set value + 5°C ~ 200°C	
Max Temperature Protection	Set value + 5°C	Set value + 5°C
Time Set	--	1~999 min.
Power Consumption	400W	400W
Heating Chamber Dimensions (W × H × D)	150mm × 51mm × 95mm	
Heating Block Dimensions (W × H × D)	2 Standard size: 91mm × 51mm × 75mm Or 1 Double size: 150mm × 51mm × 95mm	
External Dimensions (W × H × D)	240mm × 90mm × 215mm	240mm × 90mm × 215mm



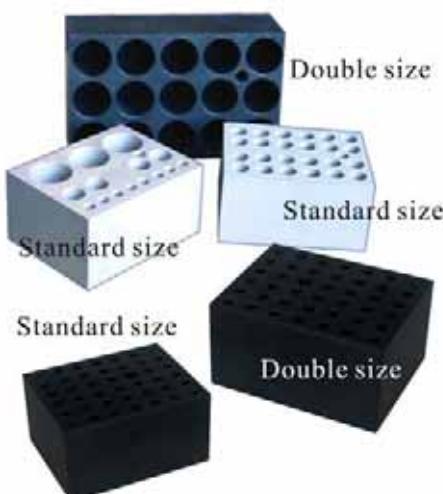
DMH-2800A



DMH-2800D



Optional blocks



Standard size:

Model	Size	Holes	Diameter
Block-51S-01	6	30	7.9 (5/16")
Block-51S-02	8	30	8.3 (21/64")
Block-51S-03	10	20	10.3 (13/32")
Block-51S-04	12 or 13	22	13.5 (17/32")
Block-51S-05	15 or 16	12	17.5 (11/16")
Block-51S-06	17 or 18	12	19.0 (3/4")
Block-51S-07	20	8	20.6 (13/16")
Block-51S-08	25	5	25.4 (1")

B10- Water Bath



WB-5000



WB-10000



WB-20000

Descriptions

Water bath is an important thermostat equipment in chemical experiments. Because its high precision controllable heating circuit, the precision can reach to $\pm 0.2^{\circ}\text{C}$. Its LED display, on the other hand, provides clear and precise display of actual temperature and set temperature. In addition, this product uses durable material to ensure high productivity and long-term use.

Features

- A. Precise digital thermal control to ensure stability and precision.
- B. Two 4-digits LED display to show set temperature and actual temperature.
- C. Stainless steel tank and cover guarantee durability and cleanliness.
- D. Automatic temperature protection alarm guarantees safe and reliable operation.
- E. Magnetic stirring under the stainless steel tank ensures even temperature.

Specifications

Model	WB-5000	WB-10000	WB-20000
Capacity (L)	6L	10L	20L
Temperature Range	Room temperature + 5°C ~ 100°C		
Temperature Accuracy	$\pm 0.2^{\circ}\text{C}$	$\pm 0.2^{\circ}\text{C}$	$\pm 0.2^{\circ}\text{C}$
Power Consumption (W)	350W	550W	1100W
Internal Dimensions (W × L × D) (mm)	300 × 150 × 150	300 × 250 × 150	490 × 295 × 150
External Dimensions (W × L × D) (mm)	320 × 175 × 260	320 × 280 × 260	570 × 360 × 390

B11- Shaking Bath



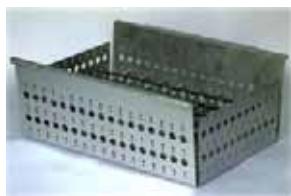
Descriptions & Features

- A. Microchip thermal control that enables to heat immediately and maintain stable temperature.
- B. Two 4-digit panels separately display set temperature and actual temperature, easy and direct to operate.
- C. Automatic power failure of max temperature guarantees safe and reliable operation.
- D. Error correction function of temperature controller allows more accurate temperature control.
- E. Unrestrainedly adjustable shaking times and duration.
- F. Steeple roof design avoids condensed water dropping into test tubes.
- G. With a magnetic Stir bar function.

Specifications

Model	HSB-20000P Shaking Bath
Temperature Range	Room temperature + 5°C ~ 100°C
Temperature Increment	±0.1°C
Temperature Accuracy	±0.2°C
Max Temperature Protection	Set temperature + 10°C
Heating Power Consumption (W)	600W ~ 1200W
Time Set	10min ~ 99hr 59min
Vibrating frequency	40 ~ 150 times/min
Vibrating displacement	18 mm (horizontal)
Vibrating time	10 ~ 90min
Capacity (L)	20L
Internal Dimensions (W × L × D)	490mm × 295mm × 150mm
External Dimensions (W × L × D)	500mm × 300mm × 300mm

Optional accessories



(A)



(B)



(C)



(D)

Dimensions of stainless rack	360mm × 275mm × 150mm (W × L × D)
Adjustable springs of each rack	17 × 12
Test tube tray	Holds three test tube racks
Test tube rack	Holds Φ 13.5 × 60, Φ 20 × 40, Φ 25 × 24, Φ 30 × 24
Erlenmeyer flask tray	Holds 50ml × 24, 100ml × 15, 200ml × 6, 250mm × 6, 500ml × 6

B12- FA/JA Electronic Balance



Features

Model : FA/JA series instrument :

- Large back-lighted LCD makes the operator more comfortable.
- Artificial design, originative structure, handsome appearance, New generation of electromagnetic gauge transducer reliably guarantees the precision of the products. With many application programs, such as automatic fault detection, linear four point calibration, overloading protection.

Function:

- Having the functions of counting, unit conversion(karat, ounce etc) steady change, full scale flat, zero point track, the operation is simple and reliable
 - Installed with RS232C interface inside, the produces can be directly connected to computers and printers etc.
 - Inside decurrent weighing hook.
- For **FA-C and JA-C** series have equipped with automatic calibration inside, which makes the operation of balance more simple and quick, the function more stable, the read more accurate.

Specifications

Model	FA-1104B	FA-1604B	FA-2104B
Capacity	110g	160g	210g
Minimum Display	0.0001g	0.0001g	0.0001g
Pan Size	Φ 80mm	Φ 80mm	Φ 80mm

Model	FA-1204C	FA-2204C
Capacity	120g	220g
Minimum Display	0.0001g	0.0001g
Pan Size	Φ90mm	Φ90mm

Model	JA-1003B	JA-2003B	JA-3003B	JA-5003B
Capacity	100g	200g	300g	500g
Minimum Display	0.001g	0.001g	0.001g	0.001g
Pan Size	Φ80mm	Φ80mm	Φ80mm	Φ110mm

Model	JA-1003C	JA-2003C	JA-3003C
Capacity	100g	200g	300g
Minimum Display	0.001g	0.001g	0.001g
Pan Size	Φ90mm	Φ90mm	Φ90mm

Random Accessories

1. Calibration weights - 1 piece (option)
2. Wire with both-side plug - 1 piece
3. Weights tweezers - 1 piece
4. Handkerchief - 1 piece
5. Operation manual - 1 piece
6. Certificate - 1 piece
7. Brush - 1 piece
8. Nipper - 1 piece

B12- YP Electronic Balance



Features

Model: YP series introduction:

New design makes weighing reaction and position-fixed more quick, The unique metallic base and mechanical structure ensure the stability of balances and improves the interference immunity of balances. The instrument is portable and can be operated outdoors.

Feature:

- Being equipped with both AC and DC power source, having gradienter back-lighted
- LED, react quickly, more stable.

Function:

- System operating: counting, percentage, automatic calibrating, calibrating point selecting, calibrating weigh(optional).
- Having the functions of conversion among many metering units, steady change, remembering function ,counting and weighing animals ,full scale flay.
- Being able to equipped with RS232C output interface.

Specifications

Model	YP-1002	YP-3002	YP-5002	YP-10002	YP-20002	YP-30002
Capacity	100g	300g	500g	1000g	2000g	3000g
Readability	0.01g	0.01g	0.01g	0.01g	0.01g	0.01g

Random Accessories

1. Electronic Scale - 1 piece
2. User's manual - 1 piece
3. Scale pan - 1 piece
4. AC adapter - 1 piece

C01- Micro Liter Syringe (Fixed Syringes for GC, HPLC)



Specifications

Fixed Syringes for Gas Chromatography

ISO 9001:2000

Cat. No.	Model	Remarks
SGC-1F-05	0.5ul Fixed Syringe (for GC)	Zero dead volume, Beveled needle
SGC-1F-1	1ul Fixed Syringe (for GC)	Zero dead volume, Beveled needle
SGC-1F-5	5ul Fixed Syringe (for GC)	Zero dead volume, Beveled needle
SGC-1F-10	10ul Fixed Syringe (for GC)	Beveled needle
SGC-1F-25	25ul Fixed Syringe (for GC)	Beveled needle
SGC-1F-50	50ul Fixed Syringe (for GC)	Beveled needle
SGC-1F-100	100ul Fixed Syringe (for GC)	Beveled needle
SGC-TF-250	250ul Fixed Syringe (for GC)	Teflon plunger, Beveled needle
SGC-TF-500	500ul Fixed Syringe (for GC)	Teflon plunger, Beveled needle
SGC-TF-1000	1000ul Fixed Syringe (for GC)	Teflon plunger, Beveled needle

Fixed Syringes for Liquid Chromatography

ISO 9001:2000

Cat. No.	Model	Remarks
SLC-1F-05	0.5ul Fixed Syringe (for HPLC)	Zero dead volume, Blunt needle
SLC-1F-1	1ul Fixed Syringe (for HPLC)	Zero dead volume, Blunt needle
SLC-1F-5	5ul Fixed Syringe (for HPLC)	Zero dead volume, Blunt needle
SLC-1F-10	10ul Fixed Syringe (for HPLC)	Blunt needle
SLC-1F-25	25ul Fixed Syringe (for HPLC)	Blunt needle
SLC-1F-50	50ul Fixed Syringe (for HPLC)	Blunt needle
SLC-1F-100	100ul Fixed Syringe (for HPLC)	Blunt needle
SLC-TF-250	250ul Fixed Syringe (for HPLC)	Teflon plunger, Blunt needle
SLC-TF-500	500ul Fixed Syringe (for HPLC)	Teflon plunger, Blunt needle
SLC-TF-1000	1000ul Fixed Syringe (for HPLC)	Teflon plunger, Blunt needle

C01- Micro Liter Syringe (Removable Syringes)



Replaceable Syringe



Luer Lock Syringe

Specifications

Removable Needle Syringes

ISO 9001:2000

Cat. No.	Model	Remarks
SGC-1R-10	10ul Replaceable Syringe	Replaceable needle
SGC-1R-25	25ul Replaceable Syringe	Replaceable needle
SGC-1R-50	50ul Replaceable Syringe	Replaceable needle
SGC-1R-100	100ul Replaceable Syringe	Replaceable needle
SGC-LR-250	250ul Luer Lock Syringe	Teflon plunger, Cone-shaped needle head secured by a Twist-lock
SGC-LR-500	500ul Luer Lock Syringe	Teflon plunger, Cone-shaped needle head secured by a Twist-lock
SGC-LR-1000	1000ul Luer Lock Syringe	Teflon plunger, Cone-shaped needle head secured by a Twist-lock
SGC-LR-2500	2500ul Luer Lock Syringe	Teflon plunger, Cone-shaped needle head secured by a Twist-lock
SGC-LR-5000	5000ul Luer Lock Syringe	Teflon plunger, Replaceable Cone-shaped needle head secured by a Twist-lock
SGC-LR-10000	10000ul Luer Lock Syringe	Teflon plunger, Replaceable Cone-shaped needle head secured by a Twist-lock

C02- Membrane



Descriptions & Features

- A. The membranes are made of hydrophilic and highly solvent resistant material. They are of high quality and can be applied in general filtration and sterilization of aqueous and organic samples.
- B. These membranes have a variety of membrane types include:
 - Membranes of MCE (CA-CN)
MCE membranes are all hydrophilic and low protein binding; usually used for general biological filtration, sterilization, and filtration of aqueous solutions.
 - Membranes of Nylon
Nylon membranes are hydrophilic and resistant to many solvents; generally used for filtration and clarification of aqueous or organic solutions.
 - Membranes of PVDF
PVDF (Polyvinylidene difluoride) membranes has advantages of low protein binding, solvent resistant; made of hydrophilic material used for HPLC sample filtration and general biological filtration.
 - Membranes of PTFE
PTFE membranes can be used to filter solvents and strong acids. Although PTFE is inherently hydrophobic, it can be made hydrophilic by pre-wetting the membrane with methanol and then using with aqueous solutions.

Specifications

13mm Membranes

Cat. No.	Membrane Type	Pore Size (um)	Diameter (mm)	Qty/pkg
MJM2213	MCE	0.22	13mm	100
MJM4513	MCE	0.45	13mm	100
MNY2213	Nylon	0.22	13mm	100
MNY4513	Nylon	0.45	13mm	100
MPV2213	PVDF	0.22	13mm	100
MPV4513	PVDF	0.45	13mm	100
MPT2213	PTFE	0.22	13mm	100
MPT4513	PTFE	0.45	13mm	100

25mm Membranes

Cat. No.	Membrane Type	Pore Size (um)	Diameter (mm)	Qty/pkg
MJM2225	MCE	0.22	25mm	100
MJM4525	MCE	0.45	25mm	100
MNY2225	Nylon	0.22	25mm	100
MNY4525	Nylon	0.45	25mm	100
MPV2225	PVDF	0.22	25mm	100
MPV4525	PVDF	0.45	25mm	100
MPT2225	PTFE	0.22	25mm	100
MPT4525	PTFE	0.45	25mm	100

47mm Membranes

Cat. No.	Membrane Type	Pore Size (um)	Diameter (mm)	Qty/pkg
MJM2247	MCE	0.22	47mm	100
MJM4547	MCE	0.45	47mm	100
MNY2247	Nylon	0.22	47mm	100
MNY4547	Nylon	0.45	47mm	100
MPV2247	PVDF	0.22	47mm	100
MPV4547	PVDF	0.45	47mm	100
MPT2247	PTFE	0.22	47mm	100
MPT4547	PTFE	0.45	47mm	100

C03- Syringe Filter



Descriptions & Features

The housing is polypropylene (PP) with highly solvent resistant and exhibit low extractable and the non-pigmented polypropylene (PP) housing to assure that filtrates will not be adulterated due to color pigment ,dye, etc.

A. Membrane of MCE (CA-CN)

- Lowest protein binding material available
- Highest throughput
- Hydrophilic

B. Membrane of Nylon

- Wide chemical compatibility range
- Extremely low extractable
- Strength and dimensional stability
- Naturally hydrophilic

C. Membrane of PVDF

- Lowest protein binding material available
- Solvent resistant
- Naturally hydrophobic

D. Membrane of PTFE

- Compatible with strong acids & aggressive solvents
- Improved durability and stability
- Naturally hydrophobic

Specifications

Information of Syringe Filters

Filtration area	13 mm: 0.8cm ² ; 25 mm: 4.1cm ²
Sample volume	13 mm: <10ml; 25 mm: <100ml
Dead volume	13 mm: <25ul; 25 mm: <115ul
Max. operating temperature	50°C
Max. operating pressure	13 mm: 75 psi; 25 mm: 75 psi

13mm Syringe Filters

Cat. No.	Membrane Type	Pore Size (um)	Diameter (mm)	Qty/pkg
SJM2213	MCE	0.22	13mm	100
SJM4513	MCE	0.45	13mm	100
SNY2213	Nylon	0.22	13mm	100
SNY4513	Nylon	0.45	13mm	100
SPV2213	PVDF	0.22	13mm	100
SPV4513	PVDF	0.45	13mm	100
SPT2213	PTFE	0.22	13mm	100
SPT4513	PTFE	0.45	13mm	100

25mm Syringe Filters

Cat. No.	Membrane Type	Pore Size (um)	Diameter (mm)	Qty/pkg
SJM2225	MCE	0.22	25mm	100
SJM4525	MCE	0.45	25mm	100
SNY2225	Nylon	0.22	25mm	100
SNY4525	Nylon	0.45	25mm	100
SPV2225	PVDF	0.22	25mm	100
SPV4525	PVDF	0.45	25mm	100
SPT2225	PTFE	0.22	25mm	100
SPT4525	PTFE	0.45	25mm	100

33mm Syringe Filters

Cat. No.	Membrane Type	Pore Size (um)	Diameter (mm)	Qty/pkg
SJM2233	MCE	0.22	33mm	100
SJM4533	MCE	0.45	33mm	100
SNY2233	Nylon	0.22	33mm	100
SNY4533	Nylon	0.45	33mm	100
SPV2233	PVDF	0.22	33mm	100
SPV4533	PVDF	0.45	33mm	100
SPT2233	PTFE	0.22	33mm	100
SPT4533	PTFE	0.45	33mm	100

C04- Mechanical (Adjustable Volume) Pipette



Descriptions

- A. CT adjustable volume pipette delivers high quality with excellent value for money.
- B. The range is manufactured from the latest materials ensuring light weight and durable pipette which will offer reliable service of years.
- C. The pipettes cover the volume range $0.1\mu\text{l}$ to $5000\mu\text{l}$ with 8 different single-channel adjustable volume models. The range is also available in fixed volume and 8 multi-channel models.

Features

- A. Lightweight ergonomic design.
- B. Easy to calibrate and maintain.
- C. Supplied with full documentation, warranties and certificates.
- D. Color-coded ID-stickers included with each pipette.
- E. Other features include:
 - 5 color coding caps
 - Safe-cone filter
 - Tip ejector allows convenient one-hand operation
 - Finger support keeps the instrument in place with minimum user effort
 - Digital display allows clear readability of volume setting
 - Ejector collar and tip cone materials provide excellent chemical resistance

Specifications

Model	Channel	Volume	Increment	Test Volume	Inacc.	Impr.	Safe-cone filters
		Range (μl)	(μl)	(μl)	(%)	(%)	Standard Plus
720005	1	0.1-2.5 μl	0.05 μl	2.5 μl	2.50%	2.00%	--
				1.25 μl	3.00%	3.00%	
				0.25 μl	12.00%	6.00%	
720000	1	0.5-10 μl	0.1 μl	10 μl	1.00%	0.80%	--
				5 μl	1.50%	1.50%	
				1 μl	2.50%	1.50%	
720080	1	2-20 μl	0.5 μl	20 μl	0.90%	0.40%	721008
				10 μl	1.20%	1.00%	721018
				2 μl	3.00%	2.00%	
720020	1	5-50 μl	0.5 μl	50 μl	0.60%	0.30%	721008
				25 μl	0.90%	0.60%	721018
				5 μl	2.00%	2.00%	
720050	1	10-100 μl	1 μl	100 μl	0.80%	0.15%	721007
				50 μl	1.00%	0.40%	72017
				10 μl	3.00%	1.50%	
720070	1	20-200 μl	1 μl	200 μl	0.60%	0.15%	721007
				100 μl	0.80%	0.30%	721017
				20 μl	3.00%	1.00%	
720060	1	100-1000 μl	5 μl	1000 μl	0.60%	0.20%	721006
				500 μl	0.70%	0.25%	721016
				100 μl	2.00%	0.70%	
720110	1	1000-5000 μl	50 μl	5000 μl	0.50%	0.15%	721005
				2500 μl	0.60%	0.30%	721015
				1000 μl	0.70%	0.30%	

Pipettor Tips

Model No.	Type	Maximum capacity	Package quantity
D781348	Tip-10	10 ul	1000 / PK
D780006	Tip-300	300 ul	1000 / PK
D780019	Tip-1000	1000 ul	500 / PK
D780046	Tip-1200	1200 ul	500 / PK
D780200	Tip-5000	5000 ul	100 / PK

C05- Cuvette

Specifications

Standard cell

Picture and Name	Outside Dim H × W × D mm	Path Length mm	Inside Width mm	Volume ml	Product Number		
					ES Quartz Glass 190nm-2500nm	IR Quartz Glass 250nm-3500nm	Optical Glass 340nm-2500nm
	45 × 12.5 × 3.5	1	10	0.35	Q11001	I 11001	G11001
	45 × 12.5 × 4.5	2	10	0.70	Q11002	I 11002	G11002
	45 × 12.5 × 7.5	5	10	1.7	Q11005	I 11005	G11005
	45 × 12.5 × 12.5	10	10	3.5	Q11010	I 11010	G11010
	45 × 12.5 × 22.5	20	10	7.0	Q11020	I 11020	G11020
	45 × 12.5 × 32.5	30	10	10.5	Q11030	I 11030	G11030
	45 × 12.5 × 42.5	40	10	14	Q11040	I 11040	G11040
	45 × 12.5 × 52.5	50	10	17.5	Q11050	I 11050	G11050
	45 × 12.5 × 102.5	100	10	35.0	Q11100	I 11100	G11100
	45 × 12.5 × 7.5	5	10	1.7	Q12005	I 12005	G12005
	45 × 12.5 × 12.5	10	10	3.5	Q12010	I 12010	G12010
	45 × 12.5 × 22.5	20	10	7.0	Q12020	I 12020	G12020
	45 × 12.5 × 32.5	30	10	10.5	Q12030	I 12030	G12030
	45 × 12.5 × 42.5	40	10	14.0	Q12040	I 12040	G12040
	45 × 12.5 × 52.5	50	10	17.5	Q12050	I 12050	G12050
	45 × 12.5 × 102.5	100	10	35.0	Q12100	I 12100	G12100
	45 × 12.5 × 3.5	1	10	0.35	Q13001	I 13001	G13001
	45 × 12.5 × 4.5	2	10	0.7	Q13002	I 13002	G13002
	45 × 12.5 × 7.5	5	10	1.7	Q13005	I 13005	G13005
	45 × 12.5 × 12.5	10	10	3.5	Q13010	I 13010	G13010
	45 × 12.5 × 22.5	20	10	7.0	Q13020	I 13020	G13020
	45 × 12.5 × 32.5	30	10	10.5	Q13030	I 13030	G13030
	45 × 12.5 × 42.5	40	10	14.0	Q13040	I 13040	G13040
	45 × 12.5 × 52.5	50	10	17.5	Q13050	I 13050	G13050
	45 × 12.5 × 102.5	100	10	35.0	Q13100	I 13100	G13100

Standard cell

Picture and Name	Outside Dim H × W × D mm	Path Length mm	Inside Width mm	Volume ml	Product Number		
					ES Quartz Glass 190nm-2500nm	IR Quartz Glass 250nm-3500nm	Optical Glass 340nm-2500nm
	45 × 12.5 × 7.5	5	10	1.7	Q14005	I 14005	G14005
	45 × 12.5 × 12.5	10	10	3.5	Q14010	I 14010	G14010
	45 × 12.5 × 22.5	20	10	7.0	Q14020	I 14020	G14020
	45 × 12.5 × 32.5	30	10	10.5	Q14030	I 14030	G14030
	45 × 12.5 × 42.5	40	10	14.0	Q14040	I 14040	G14040
	45 × 12.5 × 52.5	50	10	17.5	Q14050	I 14050	G14050
	45 × 12.5 × 102.5	100	10	35.0	Q14100	I 14050	G14100
	45 × 12.5 × 3.5	1	10	0.35	Q15001	I 15001	G15001
	45 × 12.5 × 4.5	2	10	0.70	Q15002	I 15002	G15002
	45 × 12.5 × 7.5	5	10	1.7	Q15005	I 15005	G15005
	45 × 12.5 × 12.5	10	10	3.5	Q15010	I 15010	G15010
	45 × 12.5 × 22.5	20	10	7.0	Q15020	I 15020	G15020
	45 × 12.5 × 32.5	30	10	10.5	Q15030	I 15030	G15030
	45 × 12.5 × 42.5	40	10	14	Q15040	I 15040	G15040
	45 × 12.5 × 52.5	50	10	17.5	Q15050	I 15050	G15050
	45 × 12.5 × 102.5	100	10	35	Q15100	I 15100	G15100

Fluorescence cell

Picture and Name	Outside Dim H × W × D mm	Path Length mm	Inside Width mm	Volume ml	Product Number		
					ES Quartz Glass 190nm-2500nm	IR Quartz Glass 250nm-3500nm	Optical Glass 340nm-2500nm
	45 × 12.5 × 7.5	5	10	1.7	Q21005	I 21005	G21005
	45 × 12.5 × 12.5	10	10	3.5	Q21010	I 21010	G21010
	45 × 12.5 × 22.5	20	10	7.0	Q21020	I 21020	G21020
	45 × 12.5 × 32.5	30	10	10.5	Q21030	I 21030	G21030
	45 × 12.5 × 42.5	40	10	14	Q21040	I 21040	G21040
	45 × 12.5 × 52.5	50	10	17.5	Q21050	I 21050	G21050
	45 × 12.5 × 7.5	5	10	1.7	Q22005	I 22005	G22005
	45 × 12.5 × 12.5	10	10	3.5	Q22010	I 22010	G22010
	45 × 12.5 × 22.5	20	10	7.0	Q22020	I 22020	G22020
	45 × 12.5 × 32.5	30	10	10.5	Q22030	I 22030	G22030
	45 × 12.5 × 42.5	40	10	14.0	Q22040	I 22040	G22040
	45 × 12.5 × 52.5	50	10	17.5	Q22050	I 22050	G22050
	45 × 12.5 × 12.5	10	2	0.7	Q23102	I 23102	G23102
	45 × 12.5 × 12.5	10	4	1.4	Q23104	I 23104	G23104
	45 × 12.5 × 12.5	10	2	0.7	Q24102	I 24102	G24102
	45 × 12.5 × 12.5	10	4	1.4	Q24104	I 24104	G24104

Micro cell with black walls

Picture and Name	Outside Dim H × W × D mm	Path Length mm	Inside Width mm	Volume ml	Product Number		
					ES Quartz Glass 190nm-2500nm	IR Quartz Glass 250nm-3500nm	Optical Glass 340nm-2500nm
	45 × 12.5 × 7.5	5	1	0.17	Q31051	I 31051	G31051
	45 × 12.5 × 12.5	10	1	0.35	Q31101	I 31101	G31101
	45 × 12.5 × 22.5	20	1	0.7	Q31201	I 31201	G31201
	45 × 12.5 × 32.5	30	1	1	Q31301	I 31301	G31301
	45 × 12.5 × 42.5	40	1	1.4	Q31401	I 31401	G31401
	45 × 12.5 × 52.5	50	1	1.75	Q31501	I 31501	G31501
	45 × 12.5 × 7.5	5	2	0.35	Q31052	I 31052	G31052
	45 × 12.5 × 12.5	10	2	0.7	Q31102	I 31102	G31102
	45 × 12.5 × 22.5	20	2	1.4	Q31202	I 31202	G31202
	45 × 12.5 × 32.5	30	2	2.1	Q31302	I 31302	G31302
	45 × 12.5 × 42.5	40	2	2.8	Q31402	I 31402	G31402
	45 × 12.5 × 52.5	50	2	3.5	Q31502	I 31502	G31502
	45 × 12.5 × 7.5	5	3	0.50	Q31053	I 31053	G31053
	45 × 12.5 × 12.5	10	3	1	Q31103	I 31103	G31103
	45 × 12.5 × 22.5	20	3	2.1	Q31203	I 31203	G31203
	45 × 12.5 × 32.5	30	3	3.15	Q31303	I 31303	G31303
	45 × 12.5 × 42.5	40	3	4.2	Q31403	I 31403	G31403
	45 × 12.5 × 52.5	50	3	5.25	Q31503	I 31503	G31503
	45 × 12.5 × 7.5	5	2	0.35	Q32052	I 32052	G32052
	45 × 12.5 × 12.5	10	2	0.7	Q32102	I 32102	G32102
	45 × 12.5 × 22.5	20	2	1.4	Q32202	I 32202	G32202
	45 × 12.5 × 32.5	30	2	2.1	Q32302	I 32302	G32302
	45 × 12.5 × 42.5	40	2	2.8	Q32402	I 32402	G32402
	45 × 12.5 × 52.5	50	2	3.5	Q32502	I 32502	G32502

Micro cell with black walls

Picture and Name	Outside Dim H × W × D mm	Path Length mm	Inside Width mm	Volume ml	Product Number		
					ES Quartz Glass 190nm-2500nm	IR Quartz Glass 250nm-3500nm	Optical Glass 340nm-2500nm
 Micro cell with black walls and with lid	25 × 12.5 × 12.5	10	1	0.15	Q33101	I 33101	G33101
	25 × 12.5 × 12.5	10	2	0.30	Q33102	I 33102	G33102
	25 × 12.5 × 12.5	10	3	0.45	Q33103	I 33103	G33103
	25 × 12.5 × 12.5	10	4	0.60	Q33104	I 33104	G33104

Semi-Micro cell

Picture and Name	Outside Dim H × W × D mm	Path Length mm	Inside Width mm	Volume ml	Product Number		
					ES Quartz Glass 190nm-2500nm	IR Quartz Glass 250nm-3500nm	Optical Glass 340nm-2500nm
 Semi-Micro cell with black walls and with lid	45 × 12.5 × 7.5	5	4	0.7	Q31054	I 31054	G31054
	45 × 12.5 × 12.5	10	4	1.4	Q31104	I 31104	G31104
	45 × 12.5 × 22.5	20	4	2.8	Q31204	I 31204	G31204
	45 × 12.5 × 32.5	30	4	4.2	Q31304	I 31304	G31304
	45 × 12.5 × 42.5	40	4	5.6	Q31404	I 31404	G31404
	45 × 12.5 × 52.5	50	4	7	Q31504	I 31504	G31504
 Semi-Micro cell with black walls and with lid	45 × 12.5 × 7.5	5	5	0.85	Q31055	I 31055	G31055
	45 × 12.5 × 12.5	10	5	1.75	Q31105	I 31105	G31105
	45 × 12.5 × 22.5	20	5	3.5	Q31205	I 31205	G31205
	45 × 12.5 × 32.5	30	5	5.25	Q31305	I 31305	G31305
	45 × 12.5 × 42.5	40	5	7	Q31405	I 31405	G31405
	45 × 12.5 × 52.5	50	5	8.75	Q31505	I 31505	G31505
 Semi-Micro cell with black walls and with Teflon stopper	45 × 12.5 × 7.5	5	4	0.7	Q32054	I 32054	G32054
	45 × 12.5 × 12.5	10	4	1.4	Q32104	I 32104	G32104
	45 × 12.5 × 22.5	20	4	2.8	Q32204	I 32204	G32204
	45 × 12.5 × 32.5	30	4	4.2	Q32304	I 32304	G32304
	45 × 12.5 × 42.5	40	4	5.6	Q32404	I 32404	G32404
	45 × 12.5 × 52.5	50	4	7	Q32504	I 32504	G32504
 Semi-Micro cell with frosted walls and with lid	45 × 12.5 × 7.5	5	4	0.7	Q41054	I 41054	G41054
	45 × 12.5 × 12.5	10	4	1.4	Q41104	I 41104	G41104
	45 × 12.5 × 22.5	20	4	2.8	Q41204	I 41204	G41204
	45 × 12.5 × 32.5	30	4	4.2	Q41304	I 41304	G41304
	45 × 12.5 × 42.5	40	4	5.6	Q41404	I 41404	G41404
	45 × 12.5 × 52.5	50	4	7	Q41504	I 41504	G41504

Semi-Micro cell

Picture and Name	Outside Dim H × W × D mm	Path Length mm	Inside Width mm	Volume ml	Product Number		
					ES Quartz Glass 190nm-2500nm	IR Quartz Glass 250nm-3500nm	Optical Glass 340nm-2500nm
 Semi-Micro cell with frosted walls and with lid	45 × 12.5 × 7.5	5	5	0.85	Q41055	I 41055	G41055
	45 × 12.5 × 12.5	10	5	1.7	Q41105	I 41105	G41105
	45 × 12.5 × 22.5	20	5	3.5	Q41205	I 41205	G41205
	45 × 12.5 × 32.5	30	5	5.2	Q41305	I 41305	G41305
	45 × 12.5 × 42.5	40	5	7	Q41405	I 41405	G41405
	45 × 12.5 × 52.5	50	5	8.75	Q41505	I 41505	G41505
 Semi-Micro cell with frosted walls and with Teflon stopper	45 × 12.5 × 7.5	5	4	0.7	Q42054	I 42054	G42054
	45 × 12.5 × 12.5	10	4	1.4	Q42104	I 42104	G42104
	45 × 12.5 × 22.5	20	4	2.8	Q42204	I 42204	G42204
	45 × 12.5 × 32.5	30	4	4.2	Q42304	I 42304	G42304
	45 × 12.5 × 42.5	40	4	5.6	Q42404	I 42404	G42404
	45 × 12.5 × 52.5	50	4	7	Q42504	I 42504	G42504

Micro cell with frosted walls

Picture and Name	Outside Dim H × W × D mm	Path Length mm	Inside Width mm	Volume ml	Product Number		
					ES Quartz Glass 190nm-2500nm	IR Quartz Glass 250nm-3500nm	Optical Glass 340nm-2500nm
	45 × 12.5 × 7.5	5	1	0.17	Q41051	I 41051	G41051
	45 × 12.5 × 12.5	10	1	0.35	Q41101	I 41101	G41101
	45 × 12.5 × 22.5	20	1	0.70	Q41201	I 41201	G41201
	45 × 12.5 × 32.5	30	1	1	Q41301	I 41301	G41301
	45 × 12.5 × 42.5	40	1	1.4	Q41401	I 41401	G41401
	45 × 12.5 × 52.5	50	1	1.75	Q41501	I 41501	G41501
	45 × 12.5 × 7.5	5	2	0.35	Q41052	I 41052	G41052
	45 × 12.5 × 12.5	10	2	0.70	Q41102	I 41102	G41102
	45 × 12.5 × 22.5	20	2	1.4	Q41202	I 41202	G41202
	45 × 12.5 × 32.5	30	2	2.1	Q41302	I 41302	G41302
	45 × 12.5 × 42.5	40	2	2.8	Q41402	I 41402	G41402
	45 × 12.5 × 52.5	50	2	3.5	Q41502	I 41502	G41502
	45 × 12.5 × 7.5	5	3	0.5	Q41053	I 41053	G41053
	45 × 12.5 × 12.5	10	3	1	Q41103	I 41103	G41103
	45 × 12.5 × 22.5	20	3	2.1	Q41203	I 41203	G41203
	45 × 12.5 × 32.5	30	3	3.15	Q41303	I 41303	G41303
	45 × 12.5 × 42.5	40	3	4.2	Q41403	I 41403	G41403
	45 × 12.5 × 52.5	50	3	5.25	Q41503	I 41503	G41503
	45 × 12.5 × 7.5	5	2	0.35	Q42052	I 42052	G42052
	45 × 12.5 × 12.5	10	2	0.7	Q42102	I 42102	G42102
	45 × 12.5 × 22.5	20	2	1.4	Q42202	I 42202	G42202
	45 × 12.5 × 32.5	30	2	2.1	Q42302	I 42302	G42302
	45 × 12.5 × 42.5	40	2	2.8	Q42402	I 42402	G42402
	45 × 12.5 × 52.5	50	2	3.5	Q42502	I 42502	G42502
	25 × 12.5 × 12.5	10	1	0.15	Q43101	I 43101	G43101
	25 × 12.5 × 12.5	10	2	0.30	Q43102	I 43102	G43102
	25 × 12.5 × 12.5	10	3	0.45	Q43103	I 43103	G43103
	25 × 12.5 × 12.5	10	4	0.60	Q43104	I 43104	G43104

Self masking flow cell

Picture and Name	Outside Dim H × W × D mm	Path Length mm	Inside Width mm	Volume ml	Product Number		
					ES Quartz Glass 190nm-2500nm	IR Quartz Glass 250nm-3500nm	Optical Glass 340nm-2500nm
 Self masking flow cell	45 × 12.5 × 12.5	10	φ1.5	0.018	Q51105	I 51105	G51105
	45 × 12.5 × 7.5	5	φ2	0.015	Q51052	I 51052	G51052
	45 × 12.5 × 12.5	10	φ2	0.03	Q51102	I 51102	G51102
	45 × 12.5 × 22.5	20	φ2	0.06	Q51202	I 51202	G51202
	45 × 12.5 × 7.5	5	φ3	0.035	Q51053	I 51053	G51053
	45 × 12.5 × 12.5	10	φ3	0.07	Q51103	I 51103	G51103
	45 × 12.5 × 22.5	20	φ3	0.14	Q51203	I 51203	G51203
	45 × 12.5 × 32.5	30	φ3	0.21	Q51303	I 51303	G51303
 Self masking flow cell	45 × 12.5 × 7.5	5	4 × 12	0.24	Q52054	I 52054	G52054
	45 × 12.5 × 12.5	10	4 × 12	0.48	Q52104	I 52104	G52104
	45 × 12.5 × 22.5	20	4 × 12	1.0	Q52204	I 52204	G52204
	45 × 12.5 × 32.5	30	4 × 12	1.5	Q52304	I 52304	G52304
 Self masking flow cell	45 × 12.5 × 12.5	10	φ1	0.01	Q53101	I 53101	G53101
	45 × 12.5 × 22.5	20	φ1	0.016	Q53201	I 53201	G53201
	45 × 12.5 × 32.5	30	φ1	0.025	Q53301	I 53301	G53301
	45 × 12.5 × 12.5	10	φ1.5	0.018	Q53105	I 53105	G53105
	45 × 12.5 × 22.5	20	φ1.5	0.036	Q53205	I 53205	G53205
	45 × 12.5 × 32.5	30	φ1.5	0.055	Q53305	I 53305	G53305
	45 × 12.5 × 12.5	10	φ2	0.03	Q53102	I 53102	G53102
	45 × 12.5 × 22.5	20	φ2	0.06	Q53202	I 53202	G53202
	45 × 12.5 × 32.5	30	φ2	0.09	Q53302	I 53302	G53302



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